



# ಕರ್ನಾಟಕ ರಾಜ್ಯಪತ್ರ

ಅಧಿಕೃತವಾಗಿ ಪ್ರಕಟಿಸಲಾದುದು  
ವಿಶೇಷ ರಾಜ್ಯ ಪತ್ರಿಕೆ

ಭಾಗ - ೪ಎ Part - IVA	ಬೆಂಗಳೂರು, ಶುಕ್ರವಾರ, ೨೩, ಜನವರಿ, ೨೦೨೬ ( ಮಾಘ ,೦೩, ಶಕವರ್ಷ, ೧೯೪೭) BENGALURU, FRIDAY, 23, JANURAY, 2026 ( MAGHA ,03, SHAKAVARSHA, 1947)	ನಂ. ೯೯ No. 99
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## GOVERNMENT OF KARNATKA

No: LD 245 LET 2021

Karnataka Government Secretariat,  
Vikasa Soudha,  
Bengaluru, dated:23/01/2026

### NOTIFICATION

Whereas, the draft of the Occupational Safety, Health and Working Conditions (Karnataka) Rules, 2021 which the Government of Karnataka proposed to make in exercise of the powers conferred by Section 133 and 135 of the Occupational Safety, Health and Working Conditions Code, 2020 (Central Act No.37 of 2020) is hereby published as required by clause (a) of section 137 of the said Code for the information of all the persons likely to be effected in Notification No:E-LD 245 LET 2021 dated, 4/04/2022 in Part- IV- A of Karnataka Gazette dated 25/04/2022, inviting objections and suggestions from all the persons likely to be effected thereby within the period of thirty days from the date of publication of the said Notification in the Gazette.

And whereas, the said Gazette was made available to the public dated 4/04/2022.

And whereas, the objections and suggestion received on the said draft rules was considered.

Now therefore, in exercise of powers conferred by Section 133 and 135 of the Occupational Safety, Health and Working Conditions Code, 2020 (Central Act No.37 of 2020) is hereby published as required by clause (a) of section 137 of the said Code, the Government of Karnataka hereby publishes the draft of the Occupational Safety, Health and Working Conditions (Karnataka) Rules, 2026 for the information of all the persons likely to be affected thereby and notice is hereby given that the said draft will be taken into consideration after the expiry of forty five days from the date of its publication in the Official Gazette.

Any objection or suggestion which may be received by the State Government from any person with respect to the said draft before the expiry of the period specified above will be considered by the State Government. Objections and suggestions may be addressed to the Secretary to Government, Labour Department, Vikasa Soudha, Dr. B.R. Ambedkar Veedhi, Bengaluru.

## **CHAPTER I PRELIMINARY**

**1. Title and commencement.-** (1) These rules may be called the Occupational Safety, Health and Working Conditions (Karnataka) Rules, 2026.

(2) They shall apply to any establishment in relation to which appropriate Government is the State Government under the Code.

(3) They shall come into force from the date of publication in the official gazette.

**2. Definitions. -** (1) In these rules, unless the context otherwise requires:

- (a) "*appendix*" means an appendix to these rules;
- (b) "*approved*" means approved in writing by the Chief Inspector cum facilitator or the officer notified by the State Government in this regard as the case may be;
- (c) "*Artificial Humidification*" means the introduction of moisture into the air of a room by any artificial means whatsoever except the unavoidable escapes of steam or water vapour into the atmosphere directly by a manufacturing process:  
Provided that the introduction of air directly from outside through moistened mats or screens placed in openings at times when the temperature of the room is 26 degrees or more, shall not be deemed to be artificial humidification;
- (d) "*Belt*" includes any driving strap or rope;
- (e) "*Board*" means the Board constituted under section 17 of the Code;
- (f) "*Calendar year*" means the period of twelve months beginning with the first day of January in any year;
- (g) "*Casual leave*" means leave to cover casual absence of the employees from duty for personal reasons;
- (h) "*Child*" shall have the same meaning as assigned to it in clause (ii) of section 2 of Child and Adolescent Labour (Prohibition and Regulation) Act, 1986 (Central Act 61 of 1986);
- (i) "*Code*" means the Occupational Safety, Health and Working Conditions Code, 2020 (Central Act No. 37 of 2020);
- (j) "*department*" means appropriate department of the State Government;
- (k) "*Degrees*" (of temperature) means degrees on the centigrade scale;
- (l) "*District Magistrate*", in relation to any establishment, means the District Magistrate who is vested with the executive powers of maintaining law and order in the revenue district in which the establishment is situated:

Provided that in case of an establishment, which is situated partly in one district and partly in another, the District Magistrate for the

purpose shall be the District Magistrate authorized in this behalf by the State Government;

- (m) "*Form*" means a form appended to these rules;
- (n) "*Fume*" includes gas or vapour;
- (o) "*Hazardous substance*" means the Chemicals which are described under Schedule-BB, or any other such substances which central Government or State Government may notify time to time.
- (p) "*Health Officer*" means the Municipal Health Officer or District Health Officer or such other official as may be appointed by the State Government in this behalf;
- (q) "*Hygrometer*" means an accurate wet and dry bulb hygrometer conforming to the prescribed conditions as regards construction and maintenance;
- (r) "*maintained*" means maintained in an efficient state in efficient working order and in good working condition;
- (s) "*Manager*" means a person nominated or appointed as such by the occupier of the factory.
- (t) "*National standards*" means standards as approved by the Bureau of Indian Standards and in the absence of such standards, the standards approved by the State Government for a specific purpose;
- (u) "*Official portal*" means Labour Online e-Services (Karmika Spandana and esuraksha) official web portal of Labour Department, Government of Karnataka or with any other name.
- (v) "*Plant or equipment*" includes any plant, equipment, gear, machinery, apparatus or appliance, or any part thereof;
- (w) "*power*" means electrical energy or any other form of energy which is mechanically transmitted from place of generation to the place where it is utilised and is not generated by human or animal agency;
- (x) "*pressure*" means air pressure in bars above atmospheric pressure;
- (y) "*Pressure plant*" means the pressure vessel along with its piping and other fittings operated at a pressure greater than the atmospheric pressure;
- (z) "*Prime mover*" means any engine, motor or other appliance which generates or otherwise provides power;
- (aa) "*Public Health Authority*" means the Local Health Officer having jurisdiction over the area;
- (ab) "*Qualified Nurse*" means a person who possesses a qualification in nursing recognized under the Indian Nursing Council Code, 1947, and who is registered with the Karnataka Nurses registration Council, or a similar registered body of any other State in India.

- (ac) "*Registering Officer*" means the registering officer appointed by State government for the purpose of different sections of the Code and these rules;
- (ad) "*Responsible person*" means a person appointed by the employer to be responsible for the performance of specific duty or duties and who has sufficient knowledge and experience and the requisite authority for the proper performance of such duty or duties;
- (ae) "*Sakala Services*" means Guarantee of services to citizens within the stipulated time under the Karnataka Sakaala Services Act, 2011(Karnataka Act 01 of 2012);
- (af) "*Schedule*" means a Schedule appended to these rules;
- (ag) "*Section*" means a section of the Code;
- (ah) "*Work place*" means all places where employees are required to be present or to go for work and which are under the control of an employer.
- (ai) "*Standard Safe Operating Procedures*"- means the practice followed for the safety and health of workers and safe operation of machinery, process and equipment used in such practices and such practices conform to all or any of the following, namely:-
  - (i) relevant standards approved by Bureau of Indian Standards or International Standards;
  - (ii) national building code;
  - (iii) manufacturers instruction on safe use of equipment and machinery;
  - (iv) code of practice on safety and health practices published by International Labour Organisation and amended from time to time.
- (2) All other words and expressions used herein but not defined and defined in the Code shall have the same meaning as respectively assigned to them in the code.

**3. Income from the sources.** - For the purpose of clause (x) of sub-section (1) of section 2, such dependents shall not be included who are, for the time being getting wages equivalent to or more than minimum wages applicable to that industry.

## **CHAPTER-II**

### **Registration of establishment**

**4. Registration of certain establishment under section 3.-** (1) (i) The



employer seeking registration of an establishment including Motor transport undertaking, newspaper establishment, audio-video production, building and other construction work, plantation and other commercial establishments including a place where any trade, business or occupation is carried on in which ten or more workers are employed, not already registered, shall submit to the registering officer notified under the jurisdiction of the Labour Commissionerate, an application in **Form I-A** electronically through *labouronline.karnataka.gov.in* the official portal of the Department of Labour along with the fees as specified in the Table below.

**Table of Fees**

Sl No	Number of employees	Fees
1	From 10 to 19	5000/-
2	20 but does not exceed 50	10000/-
3	51 but does not exceed 100	20000/-
4	101 but does not exceed 300	50000/-
5	301 but does not exceed 500	75000/-
6	501 but does not exceed 1000	95,000/-
7	1001 and above	1,25,000/-

(ii) Every application shall be accompanied by an undertaking in Annexure – A on company's letter head duly signed by the employer or occupier or owner regarding the matter about non-engagement of contract labourers in core activity of the establishment and he shall upload the same on the portal.

(iii) Every online application for the registration shall be accompanied by;-

(a) Self-Declaration in Annexure – B;

(b) Self-Declaration for Self Attestation in Annexure – C.

(iv) The Permanent Account Number (PAN) of the applicant or Tax Deduction Account Number (TAN) of the establishment allotted under the Income Tax Act, 1961 or any other unique number allotted to the establishment under any other Act for the time being or any other particular furnished in the Form, may be verified online.

(2) The employer seeking registration of a **factory** as defined under sub-clause (iii) under clause (v) of sub-section (1) of section 2, shall submit to the registering officer notified under the jurisdiction of Department of Factories, Boilers, Industrial Safety & Health, an application in **Form I-B** electronically

through the *esuraksha.karnataka.gov.in* the official portal of the Department of Factories, Boilers, Industrial Safety & Health, along with the fees as specified in the Table below.

**Table of Fees**

Sl No	Number of employees	Fees
1	20 but does not exceed 50	1000/-
2	51 but does not exceed 100	2000/-
3	101 but does not exceed 300	5000/-
4	301 but does not exceed 500	10000/-
5	501 and above	25000/-

(3) Late fees.- Where an employer has not submitted his application for registration within sixty (60) days as required under section sub-section (1) of section 3, he shall submit the application for registration along with late fee as under as notified from time to time:

**Table for late fee**

Period of Delay	Late fee-Percentage of Fees
Upto 30 days	10%
Upto 60 days	20%
After 60 days	40%

(4) (i) The certificate of registration shall be issued in **Form-II**, electronically immediately if the application is complete in all respect but not later than seven days from the date of submission of complete application, failing which such establishment shall be deemed to have been registered and the certificate of registration shall be auto generated.

(ii) The certificate of registration shall be non-transferable and a copy of the certificate of registration shall be displayed in the premises of the establishment at the conspicuous place in hard copy or electronically.

(iii) The registering officer shall maintain a Register of Establishment electronically in **Form-III** showing the particulars of establishment in

relation to which certificate of registration have been issued by him.

(5) (i) Any change in the ownership, management or any particulars furnished in the Registration Form submitted on the specified portal shall be updated on the portal electronically by employer or occupier or owner within thirty days of such change.

(ii) On receipt of such changes received electronically, the registering officer, he shall within thirty days make such changes and amend the certificate of registration electronically.

(6) The employer of an establishment who intends to close down his establishment, shall within thirty days intimate electronically to the registering officer for cancellation of certificate of registration and certify that all the dues payable to the workers in his establishments as been complied with.

On receipt of such intimation for closure of the establishment received electronically, the registering officer, he shall within sixty days cancel the certificate of registration of the establishment and remove the same from the register maintained by him.

Failure to cancel the certificate of registration within sixty days by the registering officer, the certificate of registration such establishment shall be deemed to have been cancelled and the cancelation of such certificate of registration shall be auto-generated.

(7) (i) If the registration of an establishment is obtained either by misrepresentation or suppression of any material facts, it shall be deemed to be the contravention of the provisions of the Code and the employer is liable for prosecution under section 94.

(ii) If the registration of an establishment is obtained fraudulently or otherwise that the registration has become useless or ineffective, the registering officer may, after giving an opportunity to the employer of the establishment to be heard, revoke the registration by an order within sixty days from coming into his notice the facts.

(8) Appeal under section 4.- (i) Any person aggrieved by the order made under section 3 may within thirty days appeal against such order before the Appellate Officer notified.

(ii) An appeal under this rule shall be disposed of within thirty days from the date on which the appeal is received.

(9) Notice of commencement or cessation of operation under section 5.- The employer of every establishment shall before thirty days of the commencement or cessation of operations, as the case may be, submit the information to the registering officer having jurisdiction in **Form-IV** electronically, and the notice of cessation of operation shall be enclosed.

## **CHAPTER-III**

### **Duties of Employers and Employees**

**5. Annual Health Examination under Section 6 (1) (c).-** Every employer of factory, building and other construction work, beedi and cigar work, plantation, motor transport undertaking shall arrange to conduct free of cost, medical examination for every worker annually, within 120 days from the commencement of the every calendar year who has completed 40 years of age. The medical examination shall be conducted by a qualified medical practitioner as per proforma in the **Form-V**. The Medical Certificate shall be obtained by the employer from the qualified medical practitioner and a copy of the same shall be made available to the employee.

**6. Letter of appointment/Experience certificate under Section 6 (1) (f).-**  
(1) No employee shall be employed in any establishment unless he has been issued a letter of appointment in **Form VI**.

Provided that, an employee who has not been issued an appointment letter containing the required particulars, shall be issued an appointment letter within three months of coming into force of this rule.

(2) Every employee shall be issued experience certificate in **Form VII** within seven days of cessation of employment in the establishment.

**7. Notice of accidents and dangerous occurrence under Section 10 (1).-**  
(1) Where at any place in an establishment which is a factory, building and other construction work, plantation, beedi and cigar works or any other establishment, an accident occurs which results in the death of any person, the employer of the establishment shall forthwith inform by telephone to the Inspector-cum Facilitator and (Chief Inspector-cum Facilitator) Notified by the Government and (District Magistrate) or Sub divisional Officer, the officer-in-charge of the nearest police station; and the family members/kin of the injured or deceased person, and send a notice thereof in **Form-VIII** electronically within twelve hours.

(2) Where at any place in an establishment which is a factory, building and other construction work, plantation, beedi and cigar works or any other establishment, an accident occurs which results in bodily injury by reason of which the person injured is prevented from working for a period of forty eight hours or more immediately following the accident, the employer or occupier or manager of the establishment shall forthwith send a notice in **Form-VIII** within twelve hours after the completion of forty eight hours, electronically to the Inspector-cum Facilitator.

(3) Wherein an establishment which is a factory, building and other construction work, plantation, beedi and cigar works, there is any

dangerous occurrence as specified in the table annexed hereto, whether causing any bodily injury or disability or not, a notice in **Form-VIII** shall within twelve hours be sent to:

- (a) The Inspector-cum-facilitator;
- (b) District Magistrate or Sub-Divisional Officer;

(4) Where a notice given relates to an accident causing death in a factory, the authority to whom the notice is sent shall make an inquiry into the occurrence within one month of the receipt of the notice and shall complete the investigation within a period of two months from the date of such receipt.

Provided that, if in the case of an accident or dangerous occurrence, death occurs to any person injured by such accident or dangerous occurrence after the notices and reports referred to in the foregoing sub-rules have been sent, the employer or occupier or manager of the establishment shall forthwith send a notice thereof by telephone and electronically to the authorities and persons mentioned in sub-rules (1) and (2) and also have this information confirmed in writing within 12 hours of the death.

Provided further that, if the period of disability from working for 48 hours or more referred to in sub-rule (2) does not occur immediately following the accident, or the dangerous occurrence, but later, or occurs in more than one spell, the report referred to shall be sent to the Inspector-cum-Facilitator in the prescribed form within 24 Hours following the hours when the actual total period of disability from working resulting from the accident or the dangerous occurrence becomes 48 hours.

Provided that, if in the case of an accident or dangerous occurrence, death occurs to any person injured by such accident or dangerous occurrence after the notices and reports referred to in the foregoing sub-rules have been sent, the employer or occupier or manager of the establishment shall forthwith send a notice thereof by telephone and electronically to the authorities and persons mentioned in sub-rules (1) and (2) and also have this information confirmed in writing within 12 hours of the death.

Provided further that, if the period of disability from working for 48 hours or more referred to in sub-rule (2) does not occur immediately following the accident, or the dangerous occurrence, but later, or occurs in more than one spell, the report referred to shall be sent to the Inspector-cum-Facilitator in the prescribed form within 24 Hours following the hours when the actual total period of disability from working resulting from the accident or the dangerous occurrence becomes 48 hours.

#### **TABLE**

The following classes of dangerous occurrences, whether or not they are attended by personal injury or disablement, namely: -

- (i) Bursting, of any *lifting appliance* or pipeline or equipment containing petroleum, steam, compressed air or other substance at a pressure greater than the atmospheric pressure;
- (ii) Collapse or failure of a crane, derrick, winch, hoist or other appliances used in raising or lowering persons or goods, or any part thereof, or the overturning of a crane.
- (iii) Explosion, explosion due to explosives, fire, leakage or release of harmful toxic gases, bursting out, leakage or escape of any molten metal, or hot liquid or gas causing bodily injury to any person or damage to any room or place in which persons are employed;
- (iv) Explosion of a receiver or container used for the storage at pressure greater than atmospheric pressure of any gas or gases (including air) or any liquid or solid resulting from the compression of gas.
- (v) collapse or failure of lifting appliances or hoist or conveyors or other similar equipment for handling building or construction material or breakage or failure of rope, chain or loose gears; overturning of cranes used in building or other construction work; falling of objects from height;
- (vi) collapse of any wall, floor, gallery, roof bridge, tunnel, chimney, wall, building or subsidence of soil or any other structure, platform, staging, scaffolding or any means of access including form work; contact work, excavation and collapse of transmission;
- (vii) Spillage or leakage of hazardous substances and damage to their container;
- (viii) collapse, capsizing, toppling or collision of transport equipment within the establishment;
- (ix) fall from height of any excavation, loading or transport machinery;
- (x) an instantaneous failure of a pillar, part of a pillar or several pillars of coal (i.e., a 'bump') in working below ground;
- (xi) a rock-burst in working below ground; a premature collapse of any part of the working;
- (xii) a breakage, fracture or failure of an essential part of any machine or apparatus whereby the safety of persons may be endangered; (xiii) a slide causing injury to any person, damage to any machinery, or interruption of normal mining operations;
- (xiv) failure of dump or side in opencast working; a blowout;
- (xv) a failure of any structure or installation whereby the safety of persons may be endangered; or spark generated due to electrical flash-over causing burn injury to any person;
- (xvi) a major uncontrolled emission of petroleum or chemical spillage;
- (xvii) Any other class of dangerous occurrence as maybe notified by the Government.

**8. Notice of Disease under Section 12 (1).-** (1) A notice in the following

format shall be sent forthwith electronically, to the Inspector Cum Facilitator or Chief Inspector cum facilitator, by the employer or occupier or manager of an establishment in which there occurs any disease as notified under the Third Schedule of the Code.

#### **NOTICE OF DISEASE**

- 1) Name of establishment:
- 2) Nature of establishment:
- 3) Details of Patient:
  - a) Name of Patient:
  - b) Employee Identification Number:
  - c) Address of Patient:
  - d) Precise occupation of patient:
- 4) Nature of disease from which patient is suffering:
- 5) Date of Detection of Disease:
- 6) Details of Medical Practitioner:
- 7) Whether the case been reported to the Medical Officer :
- 8) Whether the Patient is covered under insurance/ESIC :

Date : Signature of employer / occupier / manager

(2) If any qualified medical practitioner attends on a person who is or has been employed in an establishment and who is or is believed by the qualified medical practitioner to be suffering from any disease specified in the Third Schedule of the code, the qualified medical practitioner shall without delay send a report in writing to the office of the Chief Inspector cum Facilitator stating-

- (a) The name and full postal address of the patient,
- (b) The disease from which he believes the patient to be suffering, and
- (c) The name and address of the establishment in which the patient is or was last employed.

**9. Duties of employee under Section 13 (d) & (g).**- If an employee comes to know that of any unsafe or unhealthy condition in the establishment, he shall report to the employer, health and safety representative or safety officer, as soon as practicable, electronically or in writing in **Form-IX**.

**10. Rights of Employee under Section 14 (3).**- On receipt of information from the employee in **Form-IX** relating to the existence of an imminent danger to their safety and health, the employer shall take immediate remedial action in this regard. The employer whether satisfied or not, shall send a report forthwith in **Form-X** of such actions taken, to the Inspector-cum facilitator electronically or by registered post or speed post.

## CHAPTER IV

### Occupational Safety and Health

**11. State Occupational Safety and Health Advisory Board under Section 17 (1) & (2).-** For the purpose of section 17 of the Code the State Occupational, Safety and Health Advisory Board shall consist of :-

(i)	The Additional Chief Secretary/Principal Secretary/Secretary Labour, Government of Karnataka	<i>ex officio</i> –Chairman
(ii)	The Chairman, Karnataka State Pollution Control Board	<i>ex officio</i> - Member
(iii)	The Additional Chief Secretary/Principal Secretary/Secretary, Department of Commerce and Industries, Government of Karnataka	<i>ex officio</i> - Member
(iv)	The Labour Commissioner, Government of Karnataka	<i>ex officio</i> - Member
(v)	The Commissioner, Health and Family Welfare, Government of Karnataka	<i>ex officio</i> - Member
(vi)	The Director, Department of Factories, Boilers, Industrial Safety and Health, Government of Karnataka	<i>ex officio</i> Member
(vii)	The Director, Department of Mines and Geology, Government of Karnataka	<i>ex officio</i> - Member
(viii)	The Secretary, Karnataka Building and Other Construction Workers Welfare Board	<i>ex officio</i> - Member
(ix)	The Welfare Commissioner, Karnataka Labour Welfare Board	<i>ex officio</i> - Member
(x)	The Director, ESI (Medical Services), Government of Karnataka	<i>ex officio</i> - Member
(xi)	Five representative from recognized State Trade Union or Federation nominated by the State Government	Members
(xii)	Five persons from the field of occupational health and safety having a graduation degree in Engineering nominated by the State Government	Members
(xiii)	The Additional Secretary/Joint Secretary/Deputy Secretary, Labour Department, Government of Karnataka	<i>ex officio</i> - Member Secretary



**12. Term of Office.-** The term of office of members referred to in clause (xi) and (xii) of rule 25 shall be three years.

**13. Resignation.-** (1) A member of the State board, not being an ex officio member, may resign his office by a letter in writing addressed to the Chairman of the State Board.

(2) The seat of such a member shall fall vacant from the date on which his resignation is accepted or on the expiry of thirty days from the date of receipt of the letter of resignation whichever is earlier.

(3) When vacancy occurs in the membership of the Board, the Member-Secretary of the Board shall submit a report to the State Government, and on receipt of such report the State Government may, by notification, nominate a person to fill the vacancy and the person so nominated, shall hold office for remaining of the term of office of the member in whose place he is nominated.

**14. Cessation of membership.** - If any member of the board, not being an ex-officio member, fails to attend three consecutive meetings of the board, without obtaining the leave sanctioned by the Chairman of such board for such absence, he shall cease to be a member of board:

Provided that, the State Government may, if it is satisfied that such member was prevented by sufficient cause from attending three consecutive meetings, direct that such cessation shall not take place and on such direction being made, such member shall continue to be a member of board.

**15. Disqualification for membership.-**A person shall be disqualified for being a member of the State Board:-

- (i) if he is of unsound mind and stands so declared by a competent authority;
- (ii) if he is an un-discharged insolvent; or
- (iii) if he has been convicted for an offence, with an imprisonment of three months or more;

**16. Removal from membership.-**The State Government may remove any member of the State Board, if in its opinion such member has ceased to represent the interest which he purports to represent on such State Board:

Provided that, no such member shall be removed unless a reasonable opportunity is given to him.

**17. Allowance for members.-** (1) The travelling allowance of an official member shall be governed by the rules applicable to him for journey

performed by him on official duties and shall be paid by the authority paying his salary.

(2) The non-official members of the State Board shall be paid travelling allowance and daily allowance for attending the meeting of the State Board and its sub-committees at such places as per the guidelines of the Finance Department.

**18. Meeting of the Board and Quorum.**- (1) The Advisory Board shall meet at such time and place as may be fixed by the chairman at least twice in a year.

Provided that, the Chairman shall, within fifteen days of the receipt of a requisition in writing from not less than one third of the members of the Board, call a special meeting thereof.

(2) No business shall be transacted at any meeting unless atleast 6 members are present:

Provided that, if at any meeting less than 6 members are present the Chairman may adjourn the meeting to another date informing members present and giving notice to the other members that he proposes to dispose of the business at the adjourned meeting whether there is a prescribed quorum or not, and it shall thereupon be lawful for him to dispose of the business at the adjourned meeting irrespective of the member of members attending.

Provided further that, when the Chairman calls a meeting for considering any matter which in his opinion is of urgent nature, notice of not less than three days shall be deemed sufficient.

(3) The Chairman shall preside over all meetings of the Board, and if the Chairman is, for any reason, unable to attend a meeting of the Board, any member nominated by the Chairman in this behalf, and in the absence of such nomination, any other member elected by the members present from amongst themselves at the meeting, shall preside at the meeting.

(4) The proceedings of each meeting of the Board shall be recorded and circulated to all members after approval by the Chairman as soon after the meeting as possible, subject to confirmation in the next meeting of the Board. After such confirmation, they shall be recorded in a Minute Book, which shall be kept for permanent record.

**19. Appointment of other committees and members under Section 17 (3).**- (1) The Board may, with the prior concurrence of the State Government, appoint an officer not below the rank of a Class I officer as Secretary of the Board.

(2) The Board may, with approval of the State Government, appoint such other officers and employees as it may consider necessary for the efficient discharge of its functions;

**20. Collection of Statistics and Portal for interstate migrant workers.-**

The employer shall submit the details of occupational safety and Health statistics electronically on web portal designated for the purpose.

**21. Safety Committee under Section 22 (1).-** (1) In every establishment employing;

- a) wherein one hundred or more employees are ordinarily employed; or
- b) factory wherein five hundred workers or more; or
- c) factory carrying on hazardous process wherein two hundred fifty workers or more; or
- d) building or other construction work wherein two hundred fifty workers or more;
- e) carries on “hazardous process” defined under section 2 (za) of the Code; or
- f) carries on any process or operations declared to be “dangerous operations” under section 82 of the Code;

The employer shall set up a safety committee consisting of the following persons, namely.-

a)	Senior official of the management who by his position in the organization can contribute effectively to the functioning of the Committee.	Chairman
b)	Medical Officer (wherever applicable)	Member
c)	Three representatives of the management one each from the production, maintenance and purchase departments.	Members
d)	Three representatives from permanent workers elected among themselves.	Members
e)	Three representatives of contract workers and women workers (wherever applicable) elected among themselves.	Members
f)	Safety Officer (wherever applicable)	Member Secretary

(2) The representative of the workers shall be chosen by the registered trade union. In case where there is no registered trade union, the members may be chosen by the employees of the work site:

Provided that, there shall be adequate representation of the women workers in the committee..

(3) The tenure of the Committee shall be for two years.

(4) Safety Committee shall meet as often as necessary but atleast once in three months.

(5) The minutes of the meeting shall be recorded and produced before the Inspector Cum Facilitator on demand.

(6) Safety Committee shall have the right to be adequately and suitably informed of:-

(a) Potential safety and health hazards to which the workers may be exposed at workplace.

(b) Data on accidents as well as data resulting from surveillance of the working environment and of the health of workers exposed to hazardous substances so far as the factory is concerned, provided that the committee undertakes to use the data on a confidential basis, and solely to provide guidance and advice on measures to improve the working environment and the health and safety of the workers.

(7) Functions and duties of the Safety Committee shall include.-

(a) assisting and co-operating with management in achieving the aims and objectives outlined in the 'Health and Safety Policy' of the occupier;

(b) dealing with all matters concerning health, safety and environment, and to arrive at practicable solutions to problems encountered;

(c) creating safety awareness amongst all workers;

(d) undertaking educational, training and promotional activities;

(e) discussing reports on safety, environmental and occupational health surveys, safety audits, risk assessment, emergency and disaster management plans and implementation of "the recommendations made in the reports;

(f) carrying out health and safety surveys and identifying, the causes of accidents;

(g) looking into any complaint made on the likelihood of an

imminent danger to the safety and health of the workers and suggesting corrective measures; and  
(h) Reviewing the implementation of the recommendations made by it.

**22. Qualifications of Safety Officers.-** (a) A person shall not be eligible for appointment as a Safety Officer unless he:-

- (i) Possess a degree from an University established by law in any branch of engineering or technology and has had practical experience of working in a factory in a Supervisory capacity for a period of not less than two years, or a degree in physics or chemistry and has had practical experience of working in a factory in a supervisory capacity for a period of not less than five years, or a diploma from an institution recognised by the Government in any branch of engineering or technology and has had practical experience of working in a factory in a supervisory capacity for a period not less than five years; and
- (ii) Possess a full time degree or diploma in industrial safety from an University established by law; and
- (iii) has adequate knowledge of the Kannada and language spoken by majority of the workers in the region in which the factory where he is to be appointed is situated.

(b) Notwithstanding anything contained in clause (a), any person who possesses a degree from an University established by law in engineering or technology or diploma in engineering or technology from an institution recognised by the Government and has experience of not less than ten years in a department of the Central or State Government which deals with the administration of the Factories Act, 1948 (Central Act 63 of 1948) or the Dock Workers(Safety, Health and Welfare) Act, 1986(Central Act 54 of 1986) or this code shall also be eligible for appointment as Safety officer.

Provided that, the Chief Inspector Cum Facilitator may subject to such conditions as he may specify relax all or any of the above said qualifications if a person possesses a degree or diploma in engineering or technology and has had experience of not less than ten years, full time, on training, education, consultancy, or research in the field of accident prevention in industry or in any institution.

**23. Conditions of Service.-** (1) Where more than one Safety Officer is required to be appointed in a factory, the senior most among them shall be designated as the Chief Safety Officer, who shall have a higher status than the other Safety Officers. The Chief Safety Officer shall have overall responsibility for, and supervisory control over, the safety functions performed by the Safety Officers working under his or her authority. All

other Safety Officers shall be given appropriate status to enable them to discharge their functions effectively.

(2) In factories where only one safety officer is required to be appointed, such officer shall be given the status of a senior executive and he shall work directly under/report to the Chief Executive/Head of the factory.

(3) The scale of pay and the allowance to be granted to the Safety Officers including the Chief Safety Officer, and the other conditions of their service shall be the same as those of the other officers of corresponding status in the factory.

(4) In the case of dismissal or discharge, a Safety Officer shall have a right to appeal to the State Government, whose decision thereon shall be final.

**24. Duties of Safety Officers.-** The duties of Safety Officers shall be to advise and assist the factory management in the fulfilment of its obligations, statutory or otherwise, concerning prevention of personal injuries and maintaining a safe working environment. Those duties shall include the following, namely:-

- (i) to advise the concerned departments in planning and organising measures necessary for the effective control of personal injuries; (ii) to advise on safety aspects in all job studies and to carry out detailed job safety studies of selected jobs;
- (iii) to check and evaluate, the effectiveness of the action taken or proposed to be taken to prevent personal injuries;
- (iv) to advise the purchase and stores departments in ensuring high quality and availability of personal protective equipment; (v) to provide advice on matters related to carrying out plant safety inspections;
- (vi) to carry out plant safety inspections in order to observe the physical conditions or work and the work practices and procedures followed by workers and to render advice on measures to be adopted for removing the unsafe physical conditions and preventing unsafe action by workers;
- (vii) to render advice on matters related to reporting and investigation of industrial accidents and diseases;
- (viii) to investigate the cases of industrial diseases contacted and dangerous occurrences reportable under these rules.
- (ix) to advise on the maintenance of such records as are necessary relating to accidents, dangerous occurrences and industrial diseases;
- (x) to promote setting up of Safety Committees and act as adviser and catalyst to such committees;
- (xi) to organise in association with the concerned departments,

campaigns, competitions, contests and other activities which will develop and maintain the interest of the workers in establishing and maintaining safe conditions of work and procedure; and

(xii) to design and conducting either independently or in collaboration with the training department, suitable training and educational programmes for the prevention of personal injuries.

**25. Facilities to be provided to safety officers.-** An occupier of the factory shall provide each safety officer with such facilities, equipment and information as are necessary to enable them to discharge their duties effectively.

**26. Prohibition of performance of other duties.-** No safety officer shall be required or permitted to do any work which is inconsistent with or detrimental to the performance of the duties prescribed in rule 38.

**27. Recruitment of safety officer.-** (i) Selection for appointment to the post of Safety Officer shall be made, in accordance with the policy of the establishment if any, either by direct recruitment or by transfer or by promotion or deputation among the eligible candidates available for recruitment as Safety Officer under this code through a Selection Committee appointed by the Employer of the Establishment.

(ii) The appointment of the Safety Officer, when made, shall be intimated electronically by the Employer of the Establishment to the Inspector-cum-facilitator, giving details about the qualifications, previous experience, the terms and conditions of employment and any other relevant particulars of the officer appointed as well as the details of the selection committee. If no objections are communicated electronically by the Inspector cum facilitator in this regard within 30 days from the date of receipt of this intimation, the said appointment shall be deemed to have been made in accordance with the provisions of this code.

(iii) Filling up of the vacancy of Safety Officer post: Every vacancy aroused in the post of Safety Officer shall be forthwith intimated by the Employer to the Inspector-cum-facilitator and shall be filled up within three months of the occurrence of such vacancy.

**28. Number of Safety Officers.-** In every establishment where appointing of Safety officer is mandatory shall appoint safety officers, as laid down in the scale given below :

**(A) For Factories (Non-Hazardous)**

Sl.No.	Employment	Number of Safety officers
1.	500 to 1000 workers	One safety officer

2.	1001 and above	One Safety Officer for every 1000 workers
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**(B) For factories carrying on Hazardous process**

Sl.No	Employment	Number of Safety officers
1.	250 to 500 workers	One safety officer
2.	501 and above	One Safety Officer for every 500 workers

**(C) For Building or other construction work**

Sl.No.	Employment	Number of Safety officers
1.	250 to 500 workers	One safety officer
2.	501 and above	One Safety Officer for every 500 workers

**(D) For Dock Work**

Sl.No.	Employment	Number of Safety officers
1.	500 to 1000 workers	One safety officer
2.	1001 and above	One Safety Officer for every 1000 workers

## CHAPTER-V

### Hours of Work And Annual Leave With Wages

**29. Daily and weekly working hours under Section 25.-** (1) No worker shall be required or allowed to work in an establishment for more than forty eight hours in any week.

(3) The period of work of a worker shall be so arranged that inclusive of his intervals for rest, shall not spread over for more than ten and a half hours in a day.

Provided, the State Government may by notification in the Official Gazette increase the spread over up to 12 hours inclusive of his intervals for rest in respect of any group or class or description of factories on such conditions as it may deem expedient, subject to the written consent of such worker for such work.

(4) The period of works of workers shall not exceed five hours and that no worker shall work for more than five hours before he has had an



interval for rest of atleast half an hour.

Provided, the state government may by notification extend the total number of hours of work of a worker without an interval to six hours in respect of any group or class or description of factories on such conditions as it may deem expedient.

**30. Weekly day of rest.-** (1) For the purpose of section 26, there shall be posted up in a conspicuous place outside the office of every establishment a notice in Kannada and in English or any other language understood by majority of the workers showing the weekly day of rest. Where the weekly day of rest is not the same day for all persons employed in the establishment, the notice shall show the day of rest allowed to each relay, or set of persons or individual.

(2) No adult worker shall be required or allowed to work in an establishment on the weekly day of rest (hereinafter referred to as the said day), unless-

(i) he has or will have a holiday for a whole day on one of the three days immediately before or after the said day, and

(ii) the employer of the establishment has, before the said day or the substituted day under clause (i), whichever is earlier,-

(a) delivered a notice at the office of the Inspector-cum-facilitator of his intention to require the worker to work on the said day and of the day which is to be substituted, and

(b) displayed a notice to that effect in the establishment:

Provided that, no substitution shall be made which will result in any worker working for more than ten days consecutively without a holiday for a whole day.

(1) Notices given under sub-rule(2) may be cancelled by a notice delivered at the office of the Inspector-cum-facilitator and a notice displayed in the establishment not later than the day before the said day or the holiday to be cancelled, whichever is earlier.

(2) Where, in accordance with the provisions of sub-rule (2), any worker works on the said day and has had a holiday on one of the three days immediately before it, that said day shall, for the purpose of calculating his weekly hours of work, be included in the preceding week.

**31. Compensatory holidays under Section 26.-** (1) Except in the case of worker engaged in any work which for technical reasons must be carried on continuously throughout the day, the compensatory holidays to be allowed under sub section (3) of section 26 of the Code shall be so spaced that not more than two compensatory holidays are given in one week.

(2) The employer of the establishment shall display, on or before the end of the month in which holidays are lost, a notice in respect of workers allowed compensatory holidays during the following month and of the dates thereof, at the place at which the notice of periods of works prescribed under section 26 is displayed. Any subsequent change in the notice in respect of any compensatory holiday shall be made not less than three days in advance of the date of that holiday.

(3) Any compensatory holiday or holidays to which a worker is entitled shall be given to him before he is discharged or dismissed and shall not be reckoned as part of any period of notice required to be given before discharge or dismissal.

**32. Extra Wages for overtime under Section 27.-** (1) In pursuance of Section 27 of Code, Where a worker works;

- (i) for more than nine hours in any day or for more than forty eight hours in any week, working for six days in any week;
- (ii) for more than ten hours in any day or for more than forty eight hours in any week, working for five days in any week;
- (iii) for more than eleven and a half hours in any day working for four days in any week, or works on paid holidays

- he shall in respect of overtime work, be entitled to overtime wages at the rate of twice his ordinary rate of wages.

(2) In calculating overtime on any day, a fraction of an hour between 15 to 30 minutes shall be counted as 30 minutes and in case of more than 30 minutes it shall be rounded and shall be counted as an hour on actual basis.

(3) In calculating the wages or earnings in the case of a worker it shall be the daily wages or earnings.

(4) The workers may be allowed/required to work for more than the hours stipulated under rule 29, subject to the following conditions, under the following works and circumstances namely;

- (i) urgent repairs;
- (ii) work in the nature of preparatory or complimentary work; (iii) work which is necessarily so intermittent that the intervals during which they do not work while on duty ordinarily amount to more than the intervals for rest;
- (iv) work which for technical reasons must be carried on continuously;
- (v) engaged in making or supplying articles of prime necessity which

- must be made or supplied every day,
  - (vi) engaged in a process which cannot be carried on except during fixed seasons;
  - (vii) engaged in a process which cannot be carried on except at times dependent on the irregular action of natural forces;
  - (viii) engaged in an engine-rooms or boiler-houses or in attending to power-plant or transmission machinery;
  - (ix) engaged in process on account of the break-down of machinery;
  - (x) engaged in the loading or unloading of railway wagons or lorries or trucks;
  - (xi) exceptional press of work and
  - (xii) engaged in any work, which is notified by the Central Government in the Official Gazette as a work of national importance;
- Conditions:-

- (i) the total number of hours of work in any day shall not exceed twelve;
- (ii) the spread-over, inclusive of intervals for rest, shall not exceed thirteen hours in any one day;
- (iii) the total number of hours of work in any week, including overtime, shall not exceed sixty; and
- (iv) no worker shall be allowed to work overtime, for more than seven days at a stretch.

Provided that, the conditions imposed by this rule shall not apply in order to enable a shift worker to work the whole or part of a subsequent shift in the absence of a worker who has failed to report for duty;

The total number of hours of overtime work in any quarter shall not exceed one hundred and forty four

This rule shall not be applied to the persons holding position of supervision or management or employed in a confidential position in an establishment, provided their ordinary rate of wages exceed eighteen thousand rupees per month or an amount as may be notified by the Central Government from time to time.

**Explanation:** In this rule "quarter" means a period of three consecutive months beginning on the 1st of January, the 1st of April the 1st of July or the 1st of October.

**33. Restriction of double employment.-** An adult worker may be employed, in more than one factory on the same day, with the previous approval of the Inspector-cum-Facilitator, subject to the following conditions, namely:-

- (i) He shall not be employed for more than eight hours in all on any

one day.

- (ii) He shall receive a weekly holiday in accordance with the provisions of section 26.
- (iii) Every worker who is required to work in another factory on the same day shall carry with him a card in which the following particulars shall be entered by the occupier of the first factory,
  - (a) His normal periods of work as the notice of period of work, for the day.
  - (b) The period or periods he has worked in the first factory for the day.
- (iv) The occupier of the second factory in which he is to work for the rest of the day shall enter in the card the period or periods he has worked for the day in his factory. The occupier of both the factories in which the worker has worked for the day on the same day shall send to the Inspector cum facilitator, an extract of the card mentioned above not later than three days from the date on which the worker has so worked in the two factories on the same day.

**34. Notice of periods of work under Section 31.**-The notice referred to in section 31 shall be displayed at conspicuous places on a notice board or electronic board in Kannada, and either in English or language understood by the majority of the employees in **Form-XI** and copy of such notice shall be sent to Inspector-cum-facilitator electronically or by registered post.

## **CHAPTER VI**

### **Maintenance of Registers, Records And Returns**

**35. Maintenance and production of reports, registers and other records under Section 33.**- Every employer shall-

- (a) maintain register of workers, overtime work, fine, deduction for damage or loss in **Form-XII** electronically and shall be kept available at an office or the nearest convenient building within the precincts of the establishment;
- (b) in case of manual registers and other records, all particulars shall be legibly entered in ink in Kannada and either in English or the language understood by a majority of the persons employed be preserved in original for a period of three calendar year's after the date of the last report or entry;

Provided that, when the original record is lost or destroyed before the expiry of one year period, true copies thereof, if available, shall be preserved for the prescribed period.

- (c) The employer shall produce, electronically or by registered post, all the above registers on demand before the Chief Inspector-cum

facilitator or an Inspector-cum-facilitator.

**36. Display of notice.-** Every employer shall cause to display at the conspicuous place of the workplace of the establishment under his control, notice showing the name and address of the establishment, hours of work, wage period, date of payment of such wages, details of accident and dangerous occurrence in the establishment for the last five years, name and address of the Inspector-cum-facilitator having jurisdiction to such establishment and date of payment of unpaid wages to such workers in Kannada and either in English or the language understood by a majority of the persons employed.

**37. Return.-** Every employer of an establishment shall send electronically annual return in relating to such establishment in **Form-XIII** to the Inspector-cum-facilitator having jurisdiction so as to reach not later than 1<sup>st</sup> February following the end of each calendar year.

**38. Register of accident and dangerous occurrences.-** Every Employer of an establishment shall maintain the register of accident and dangerous occurrences as required under sub-clause (v) of clause (a) of section 33 of the Code in **Form-XIV**.

**39. Register of leave with wages.-** (1) Every Employer shall maintain in respect of every employee, thereof a record of leave with wages electronically or manually in **Form-XV**.

(2) The register mentioned in sub- rule (1) shall be preserved for a period of three years after the last entry in it and shall not be destroyed even after the expiry of that period unless it has been properly transferred to the new register.

## **CHAPTER VII**

### **Inspector – Cum Facilitator**

**40. Appointment of Chief Inspector Cum Facilitator and Inspector cum Facilitators sub-section (5) of section 34.-** (1) The Government may, by notification, appoint any person or persons possessing the prescribed qualification and experience to be Chief Inspector-cum-Facilitator for the purposes of such establishments or class of establishments and for such local limits of jurisdiction and also Inspector-cum-facilitators for the purpose of this code as may be specified in the notification.

(2) The Government may, by notification, appoint for the purposes of establishments as may be notified by that Government, as many Additional Chief Inspector-cum-Facilitator or any other officer of any designation as it thinks appropriate, to exercise such powers of the Chief Inspector-cum-Facilitator within his jurisdiction, as may be specified in the notification.

**41. Powers and duties of Inspector Cum Facilitators.-** (1) An Inspector Cum Facilitator shall for the purposes of the execution of the Code have power to do all or any of the following things, that is to say— (a) to photograph any worker,

(b) to inspect, examine, measure, copy, photograph, sketch or test, as the case may be, any building or room; and plant, machinery appliance or apparatus; any register or document; or anything provided for the purpose of securing the health, safety or welfare of the employees employed in a factory or a place which the Inspector Cum Facilitator has reasons to believe is a factory and to call for explanations for irregularities found, if any;

(2) The Inspector Cum Facilitator shall keep a file of the records of Inspections, visits, enquiries and orders.

(3) Every order passed under the code and these rules shall be served on the Employer/Occupier/manager of the factory—

(a) by delivering a copy of it to him personally or at his office, or

(b) by Registered post with acknowledgement due or,

(c) electronically to the email address provided.

(4) The Inspector Cum Facilitator may conduct the inspection with the prior permission of the Chief Inspector Cum Facilitator whenever a written complaint is received.

(5) Inspector Cum Facilitator shall, after every inspection, as may be deemed necessary, issue an improvement notice in the **Form-XVI** pointing out the non-compliance of provisions of safety, health and working conditions under the Code, and rules and regulations framed thereunder, to the employer or occupier or owner or master or officer-in charge of the ship or their agent.

(6) An Inspector Cum Facilitator shall, at each inspection, ascertain to what extent any shortcomings notified at previous inspection have been rectified and the notices previously issued have been complied with. His findings and

(7) Any shortcomings which may come to light during the inspection, together with any order passed by him under the Code or the regulations made there under shall be recorded and maintained.

**42. Power to take samples of any articles or substances under clause (x) of sub-section (1) of section 35.-** (1) An Inspector Cum Facilitator shall take samples or substances in an establishment after informing the employer of the establishment, taken in the manner hereinafter provided a sufficient sample of any substance used or intended to be used in the establishment, such use being—

(a) in the belief of the Inspector Cum Facilitator in contravention of any of the provisions of this code or the rules made thereunder, or

(b) in the opinion of the Inspector Cum Facilitator likely to cause bodily injury to, or injury to the health of employee in the establishment.

(2) Where the Inspector Cum Facilitator takes a sample under sub rule (1), he shall, in the presence of the person informed under that sub-section unless such person willfully absents himself, divide the sample into three portions and effectively seal and suitably mark them, and shall permit such person to add his own seal and mark thereto.

(3) The person informed as aforesaid shall, if the Inspector Cum Facilitator so requires, provide the appliance for dividing, sealing and marking the sample taken under this section.

(4) The Inspector Cum Facilitator shall-

(a) forthwith give one portion of the sample to the person informed under sub-rule (1);

(b) forthwith send the second portion to a Government Analyst or National Accreditation Board for Testing and Calibration Laboratories (NABL) for analysis and report thereon;

(c) retain the third portion for production to the Court before which proceedings, if any, are instituted in respect of the substance. (5) Any document purporting to be a report under the hand of any Government Analyst or NABL accredited laboratory upon any substance submitted to him for analysis and report under this section, may be used as evidence in any proceeding instituted in respect of the substance.

**43. Additional Duties of the Occupier of a factory.-** (1) The occupier shall arrange to carry out the safety audit for the following factories:

(i) in which hazardous manufacturing processes which involves use, storage and handling of toxic, highly inflammable, explosives, hazardous chemicals where in such toxic or highly inflammable or explosive substances are likely to be generated or given out or carried out, as listed under sub rule (b), (c) and (e) of rule 2 of The Major Accident Hazards Control (Karnataka) Rules 1994;

(i) in which the hazardous manufacturing processes as listed in First Schedule appended to Section 2(za) of the Code is carried on;

(ii) in which dangerous manufacturing process or operation as specified in rule 104 read with section 42(2)(a)-82 of the Code is carried on;

(iii) all other factories licensed to employ more than 50 workers

(2) The occupier shall arrange to carry out the safety audit to as a measure for securing the safety of persons employed therein, in the following manner, namely:-

- (a) internally, once in a year by a team of plant personnel; (b) externally, once in two years by the safety auditor,

Provided that, for factories covered under sub-rule (1)(iii) and licensed to employ less than 150 workers, the external safety audit shall be carried out once in every four years.

Provided further that, in case of any changes, total or partial, in the manufacturing process, the occupier shall, within one month of such change, carry out the safety audit externally by the Safety Auditor.

**44. Standards of Safety Audit.-** The Safety Audit shall be carried out as per the standards laid down under IS 14489 :-~~1998~~ in the Indian Standard Code of Practice on Occupational Safety and Health Audit or any such standards prevailing at the relevant time by the Safety Auditor or in case of an institution, by the person or employee possessing the qualification, experience and other requirements as set out in **Schedule-A** as a Safety Auditor.

**45. Safety Auditor.-** (1) The Chief Inspector may recognize any person possessing the qualifications, experience and other requirements as specified in the **Schedule A**, as a Safety Auditor for the purpose of carrying out Safety Audit as provided in these rules, for a period not exceeding two years from the date of such recognition:

(2) The Chief Inspector may recognize any institution, employing at least three persons possessing the qualifications, experience and other requirements as set out in the **Schedule A** as a Safety Auditor for the purpose of carrying out Safety Audit as provided by these rules, for a period not exceeding two years from the date of such recognition:

(3) Provided that, where the institute to which such recognition has been granted, ceases to employ at least three persons possessing the qualifications, experience and other requirements set out in the Schedule I, the recognition granted to such institute shall stand cancelled:

(4) Provided further that, Chief Inspector may for reasons recorded in writing, relax the requirements of qualification, if such institute is exceptionally specialized in the field of carrying out Safety Audit for not less than five years.

(5) An officer having working experience of not less than 15 years in the office of the DGFASLI or Directorate of Factories, Boilers, Industrial Safety and Health, Karnataka State (DFBISH) and not below the rank of Deputy Director of Factories at the time of relinquishing the office shall be deemed to be qualified as Safety Auditor for carrying out Safety Audit under these rules, subject to grant or renewal of certificate of recognition as safety auditor on application made in **Schedule B**, up to the age of 62 years and thereafter he shall submit a certificate of physical fitness issued by district



surgeon or Medical Officer to the Chief Inspector Cum Facilitator up to the age of 70 years.

**46. Grant or renewal or revocation of certificate of recognition of the Safety Auditor.-** (1) An application for grant or renewal, of certificate of recognition as a Safety Auditor for carrying out safety audit shall be made to the Chief Inspector by an individual in **Schedule B** and by an institution in **Schedule C**, along with fee specified in Table below, namely:-

**TABLE**

Sl. No.	Class of Safety Auditor	Fee to be paid for grant or renewal of recognition
1	Institution	Rs. 50,000/-
2	Individual	Rs. 25,000/-

(2) (a) On receipt of an application duly made in accordance with these rules, the Chief Inspector shall register such application and after having satisfied as regards the competence and facilities available at the disposal of the applicant may approve, or reject the application, after specifying the reasons thereof within 30 days, from the date of application.

(b) On approval, the Chief Inspector shall issue a certificate of recognition in **Schedule D**, subject to the following conditions, namely:-

- (i) Safety Auditor shall maintain a log book of all safety audits undertaken by him indicating the name and address of the audited factory, name of the person who has carried out safety audit, contact persons, date of the audit and date of submission of the audit report to the Occupier. It shall be produced as and when required by officers of the Department of Factories, Boilers, Industrial Safety and Health.
- (ii) Safety Auditor and the person authorized to carry out shall not conduct a Safety Audit of any factory where such auditor or person is employed, or an occupier, partner, director, or manager of that factory, or of any factory owned, operated, managed, or conducted by immediate family members, relatives or extended family members or wherein that auditor or such person has any direct or indirect interest whatsoever. An auditor or such person shall not carry out the safety audit of those factories to which that auditor or such person supplies any plant, machinery, raw material, safety equipments or other materials or equipment.
- (iii) Safety Auditor and the person authorized to carry out safety audit shall not disclose, even after ceasing to be a recognized auditor or employee of the institution, any manufacturing or commercial secrets or working processes or other confidential information which may come to his knowledge in the course of their duties as

an auditor. Any failure in this regard, the auditor shall be liable for revocation of recognition under sub-rule (6) and he shall not be eligible for recognition in future.

(iv) and any other conditions as may be specified

(3) The recognition granted under sub-rule (2) shall be valid for two years from the date of issue of Certificate of Recognition;

(4) The application for renewal of recognition as a safety auditor shall be made at least two months before the expiry of the period of recognition and the procedure stated in sub-rule (2) shall apply mutatis mutandis for its renewal.

(5) The applicant shall not be eligible for renewal of recognition as a Safety Auditor if,-

- (i) the Chief Inspector has revoked such recognition in the past on two occasions; or
- (ii) he has not carried out at-least five safety audits of factories in the past two years; or
- (iii) he or she has crossed the age of 70 years. All applicants above the age of 62 years shall submit a certificate of physical fitness for carrying out safety audit of factories issued by civil surgeon or Medical Officer along with the application
- (iv) he has disclosed the manufacturing or commercial secrets or working processes or other confidential information which may come to his knowledge in the course of his duties as an auditor.

(6) The Chief Inspector may, after giving an opportunity to the Safety Auditor of being heard, revoke the certificate of recognition, if he has a reason to believe that,-

- (i) the Safety Auditor has violated any of the conditions stipulated in the certificate of recognition or renewal of recognition; or
- (ii) the Safety Auditor has carried out the safety audit in violation of the provisions of the Act or these rules or has acted in a manner inconsistent with the intent or the purpose of the Act or rules made there under or has omitted or failed to act as required under the Act and rules made there under; or
- (iii) for any other reason.

**47. Intimation of Safety Audit.-** (1) The Occupier of the factory as well as the Safety Auditor shall inform the concerned jurisdictional office of

the Department of Factories, Boilers, Industrial Safety and Health, fifteen days in advance before commencement of the safety audit in the said factory, giving the following information;

1. Name and address of the factory;
2. Name of the Occupier;
3. Date of commencement of Audit;
4. Probable date of Completion;
5. List of raw material with maximum storage quantity;
6. List of finished products with maximum storage quantity;
7. Licenced No. of workers;
8. Manufacturing process flow chart;
9. Name of the Safety Auditor and Certificate No. and name of the person who is carrying out the safety audit,

I hereby undertake to carryout Safety Audit as per the standards laid down under IS 14489: 1998 in the Indian Standard Code of Practice on Occupational Safety and Health Audit or any such standards prevailing at the relevant time; and submit Safety Audit Report within one month from the date of completion of safety audit to the Occupier of the factory

Date:

Signature of Safety  
Auditor/Representative of the  
Institution authorized to  
carryout safety audit

I hereby undertake to submit the action taken report on the  
Recommendations of the Safety Audit on or before

.....

Date:

Signature of the Occupier

(Name of the Occupier in Block letters)

**47 A. Submission of Safety Audit Report .-** The Safety Auditor shall within one month from the date of completion of safety audit forward to the Occupier of the factory a Safety Audit Report in **Schedule E** on the letter head and his recommendations regarding improvement of the occupational safety and health in a factory:

Provided that if during safety audit, auditor finds any hazard posing danger of causing an accident, he shall immediately communicate in writing to the occupier as well as to the jurisdictional inspector cum facilitator. In such case, the occupier shall take immediate corrective action under intimation to the jurisdictional inspector cum facilitator.

**48. Compliance report on Audit Report.-** The Occupier shall, within thirty days of the receipt of the Safety Audit report in the format prescribed under **Schedule E**, forward the same to the Chief Inspector cum Facilitator along with the action taken report in pursuance to the recommendations made in the Safety Audit Report. The compliance shall be verified during the course of inspection of the factory on allocation through Web based random selection of factories for inspection.

**49. Re-audit.--**On scrutiny of the Safety Audit Report, if it is found that the safety Audit is not carried out in accordance with **rule 44**, the Chief Inspector cum Facilitator may communicate the same to the Occupier, Safety Auditor and may direct the occupier to carry out re-audit only with respect to the discrepancies pointed out. The re-audit shall be completed within thirty days from the date of such direction. The provisions of rules **47A and 48** shall apply to such re-audit.

**50. Exemptions.-** (1) Subject to the provisions of sub-rule (2), the Chief Inspector cum Facilitator, by order in writing, exempt any factory or category of factories from all or any of the provisions of these rules, subject to such conditions as it may specify in such order.

(2) No order under sub-rule (1) shall be issued unless, in the opinion of the Chief Inspector cum Facilitator, the requirements of these rules having regard to the frequency or the nature of manufacturing process carried out in that factory, which involves use, storage, handling or processing of hazardous chemicals or which involves generation of such substances, are impracticable or otherwise not necessary for the safety, health and protection of workers.

(3) Notwithstanding anything contained in sub-rule (1) and (2), the Chief Inspector cum Facilitator may, in his discretion, by order, revoke the exemption granted under sub-rule (1), at any time.

**51. Competent Person :-** (1) The Chief Inspector Cum Facilitator may recognize any person as a "Competent person", for such area and for such period as may be specified, for the purpose of carrying out tests, examination and inspections of such dangerous machineries, hoists and lifts, lifting machines and lifting tackles, pressure plants, confined spaces, ventilation systems and such other processes or plants and equipments located in a factory, as stipulated in the Code and the rules, if such a person possesses the qualifications experience and other requirements as set out in the **Schedule-F**:

Provided that, the Chief Inspector Cum Facilitator may relax the requirements of qualifications (but not the requirements in respect of the facilities at the command of such a person) if such a person is exceptionally experienced and knowledgeable.

(2) The Chief Inspector Cum Facilitator may recognise a "Competent Person" for such area and for such period as may be specified by him or any of the institutions having persons possessing qualifications and experience as set out in the Schedule referred to in sub-rule (1) of this rule for the purpose of carrying out the tests, examinations and inspections of such building, dangerous machineries, hoists and lifts, lifting machineries and lifting tackles, pressure plants, confined spaces, ventilation systems and such other processes or plants and equipments as stipulated in the code and the rules made there under.

(3) The Chief Inspector Cum Facilitator shall, on receipt of an application as per **Schedule-G or Schedule-H** from a person or institution respectively, intending to be recognised as a "Competent person", register such application immediately and after having satisfied himself as regard competence and facilities available at the disposal of the applicant, either recognise the applicant as a "Competent person" and issue a certificate of competency as prescribed in **Schedule-I** within a period of sixty days from the date of receipt of the application or reject the application specifying the reasons therefore.

(4) Every application for recognition or renewal as a competent person per **Schedule-G or Schedule-H** as the case may be shall be accompanied by a treasury challan for having credited fees online as specified in the table below:

**Table**

<b>Sl. No.</b>	<b>Competency Certificate</b>	<b>Scope</b>	<b>Fees for Recognition and renewal</b>
1	To an individual	State	Rs. 25,000/- (Irrespective of the provisions for which competency certificate is applied for)
2	To an institution	State	Rs. 25,000/- ( For each of the Persons, irrespective of the provisions for which competency certificate is applied for)
3	To an individual	Factory	Rs. 50,000/- (Irrespective of the provisions for which competency certificate is applied for)

(5) A certificate issued under this rule shall be renewed for a period of twelve months on payment of a renewal fee as specified in the Table above.

(6) The Chief Inspector Cum Facilitator may, after giving an opportunity to the person of being heard, revoke the certificate of competency:-

- (i) if he has a reasons to believe that competent person:-

- (a) has violated any of the conditions stipulated in the certificate of competency or;
- (b) has carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of the Act and rules or has omitted to act as required under the Act and Rules; or
- (ii) for any other reasons to be recorded in writing.

**(7)** (1) The applicant shall not be eligible for recognition as Competent Person if he has crossed the age of 62 years.

(2) The applicant shall not be eligible for renewal of recognition as a Competent Person if,-

He has crossed the age of 65 years. All applicants applying for renewal of recognition who are above the age of 62 years shall submit a certificate of physical fitness issued by District Surgeon along with the application.

(3) If the Competent Person notices any hazard, which is likely to pose imminent danger of causing an accident, during the course of examination/testing of the equipment, he shall immediately communicate the same in writing to the Occupier, Chief Inspector Cum Facilitator and the jurisdictional Inspector cum Facilitator.

**Explanation:-**For the purpose of this rule, institution includes an organisation.

**52. Issue of Stability Certificate by civil/ structural engineers.-** (1) The Chief Inspector Cum Facilitator may recognize any person as a "Person competent to issue Stability Certificate", for such area and for such period as may be specified, for the purpose of carrying out tests, examination and inspections of such buildings, plants and Structures located in a factory, as stipulated in the Code and the rules, if such a person possesses the qualifications experience and other requirements as set out in the **Schedule-J**:

(2) The Chief Inspector Cum Facilitator may recognise a "Person competent to issue Stability Certificate" for such area and for such period as may be specified by him or any of the institutions having persons possessing qualifications and experience as set out in the Schedule referred to in sub-rule (1) of this rule for the purpose of carrying out the tests, examinations and inspections of such building, plants and Structures as stipulated in the code and the rules made there under.

(3) The Chief Inspector Cum Facilitator shall, on receipt of an application as per **Schedule-K** or **Schedule-L** from a person or institution respectively, intending to get recognised as a "Person competent to issue Stability Certificate", register such application immediately and after having

satisfied himself as regard competence and facilities available at the disposal of the applicant, either recognise the applicant as a "Person competent to issue Stability Certificate" and issue a certificate of competency as prescribed in **Schedule-M** within a period of sixty days from the date of receipt of the application or reject the application specifying the reasons therefore.

(4) Every application for recognition or renewal as a competent person per **Schedule-K or Schedule-L** as the case may be shall be accompanied by a treasury challan for having credited fees online as specified in the table below:

**Table**

<b>Sl. No</b>	<b>Competency Certificate</b>	<b>Scope</b>	<b>Fees for Recognition and Renewal</b>
1	To an individual	State	Rs. 10,000/-
2	To an institution	State	Rs. 10,000/- ( For each of the Persons to whom competency certificate is applied for)

(5) A certificate issued under this rule shall be renewed for a period of twelve months on payment of a renewal fee as specified in the Table above.

(6) The Chief Inspector Cum Facilitator may, after giving an opportunity to the person of being heard, revoke the certificate of competency:-

- (iii) if he has a reasons to believe that competent person:-
  - (a) has violated any of the conditions stipulated in the certificate of competency or;
  - (b) has carried out a test, examination and inspection or has acted in a manner inconsistent with the intent or the purpose of the Act and rules or has omitted to act as required under the Act and Rules; or
- (iv) for any other reasons to be recorded in writing.

**Explanation:-**For the purpose of this rule, institution includes an organization.

**53. Appointment of Medical Officer.-** The Medical Officer appointed under sub-section (1) of section 42 of the Code, shall be a medical practitioner who possesses qualification as defined in the National Medical Commission Act, 2019 (Central Act 30 of 2019) and who is enrolled on Indian Medical Register or on a State Medical Register as defined in that Act.

**54. Duties of Medical Officer.-** (1) A Medical Officer appointed under sub-section (1) of section 42 shall carry out the examination and furnish report as the Government may direct;

- (a) For examination and certification of workers in a factory in dangerous operations and processes as specified in Rule 104;

(b) For medical supervision of any establishment or class of establishment where cases of chronic occupational illness have occurred due to the nature of any process carried on or other conditions of work prevailing in such establishments;

(c) in respect of any establishment or class of establishment or description of establishment in which operations involve any risk of injury to the health of any person or class of persons employed therein;

(d) to undertake occupational health survey of any or class of establishment, where cases of illness have occurred or there is prevalence of diseases as prescribed in Third Schedule of the Code;

(e) for the examination and certification of adolescents for the purpose of ascertaining his fitness for employment in an establishment or class of establishment or description of establishment in which the work involve any risk of injury to their health;

(2) (a) On receipt of a reference under clause (c) sub-section (2) of section 42 of the Code or otherwise, the Medical Officer shall, after giving prior notice regarding the date, time and place for medical examination and upon examining the person sent for such examination, prepare the age and fitness certificate in **Form XVII** and deliver the same to the manager of the establishment concerned after retaining a copy thereof.

(b) The Medical Officer may seek opinion of specialists like radiologist, dentist and orthopedic surgeon as the case may be, for the purpose of determination of age.

(3) Process for medical fitness examination.-

i. A medical officer shall, on the application of any adolescent or his parent or guardian accompanied by a document signed by the employer of a factory that such person will be employed therein if certified to be fit for work in a factory, or on the application of the employer of the factory in which any adolescent wishes to work, examine such person and ascertain his fitness for work in a factory.

ii. The medical officer, after examination, may grant to such adolescent, in **Form XXXVI** or may renew, a certificate of fitness to work in a factory as an adolescent, if he is satisfied that the adolescent has completed his fourteenth year, has attained the prescribed physical standards and is fit for such work:

Provided that unless the Medical Officer has personal knowledge of the place where the adolescent proposes to work and of the manufacturing process in which he will be employed, he shall not grant or renew a certificate under this sub-rule until he/she has examined such place.

iii. A certificate of fitness granted or renewed under sub-rule (2),

a) shall be valid only for a period of twelve months from the



date there of;

b) may be made subject to conditions with regard to the nature of the work in which adolescent may be employed, or requiring re-examination of the adolescent before the expiry of the period of twelve months.

iv. A medical officer shall revoke any certificate granted or renewed under sub-rule (2), if in his opinion the holder of it is no longer fit to work in the capacity stated therein in a factory.

v. Where a certificate under this rule with reference to any adolescent is granted or renewed subject to such conditions as are referred to in sub-rule(iii), the adolescent shall not be required or allowed to work in any establishment/ factory, except in accordance with those conditions.

vi. Fee required for medical examination must be paid by the employer and shall not be recoverable from the adolescent, his parents or guardian. The Fee for medical examination shall be paid electronically as fixed by the State Government by notification from time to time.

vii. Medical Officer shall maintain record of examinations under this rule in **Form XVII**

## **Chapter VIII**

### **Special provisions relating to employment of women**

#### **55. Employment of Women in Night Shifts under Section 43.-**

(1)The following conditions shall be met for employment of women during night or before 6.00 a.m. and beyond 7.00 p.m in any day, namely,-

- (a) the written consent of women employee shall be taken;
- (b) no women shall be employed against the maternity benefit provisions laid down under the Social Security Code, 2020 (Act 36 of 2020);
- (c) adequate free transportation facilities shall be provided to women employee to pick-up and drop such employee to the doorstep of her residence;
- (d) the workplace including passage towards conveniences or facilities concerning toilet, washrooms, drinking water, entry and exit of women employee should be well-lit;
- (e) the toilet, washroom and drinking facilities should be near the workplace where such women employee are employed;
- (f) Provide safe, secure and healthy working condition such that no women employee is disadvantaged in connection with her employment;
- (g) The provisions of the Sexual Harassment of Women at workplace

(Prevention, Prohibition and Redressal) Act, 2013 (Central Act 14 of 2013), as applicable to the establishments, shall be complied with.

- (h) It shall be the duty of the employer to prevent or deter the commission of acts of sexual harassment and to provide the procedures for the resolution, statement or prosecution of acts of sexual harassment by taking all steps required;
- (i) The employer shall take appropriate steps to prevent sexual harassment;
- (j) In case of any criminal case of sexual harassment, the employer shall initiate appropriate action in accordance with the penal law without delay and also ensure that victims or witnesses are not victimized or discriminated while dealing with the complaints of sexual harassment and wherever necessary, at the request of the affected worker, shift or transfer the perpetrator, if circumstances warrant. The employer shall take appropriate disciplinary action if such conduct amounts to misconduct which outrage the modesty of the women worker in or during the employment;
- (k) The employer shall maintain a complaint mechanism in the establishment itself and the said mechanism shall ensure time-bound treatment of complaints. Such mechanism should be at any rate to provide, when necessary, an Internal Compliance Committee, a special counselor or other support services including the maintenance of confidentiality;
- (l) Such an Internal Compliance Committee shall be headed by a woman and not less than half of its members shall be women, besides a non-governmental organization's representation in the Committee. Such person shall be familiar with the issues of sexual harassment;
- (m) The women workers shall be allowed to raise issues of sexual harassment in the employee's meeting and other appropriate forum;
- (n) The women workers shall be made aware of their rights in particular by prominently notifying the guidelines on the subject;
- (o) Wherever there is a harassment at the instance of a third party, either by an act or omission, the employer and person in charge of the establishment shall take all steps necessary and reasonable to assist the affected persons in terms of support and preventive action;
- (p) The employer shall provide proper lighting not only inside the factory, but also surroundings of the establishment and to all places where the women workers may move out of necessity in

the course of such shift;

- (q) The employer shall make sure that the women workers are employed in a batch not less than five;
- (r) Sufficient women security shall be provided during the night shift at the entry as well as exit points;
- (s) Separate dormitory accommodation shall be provided for women workers after the working hours in night shift, if required;
- (t) Mess room shall be provided for the female employees;
- (u) The employer shall provide appropriate medical facilities and also make available at any time of urgency on call where more than hundred women workers are employed in a shift, a separate vehicle shall be kept ready to meet the emergency situation such as hospitalization, whenever there is a case of injury or incidental acts of harassment;
- (v) During night shift not less than 1/4th of strength of the supervisors or shift-in-charge or foreman or other supervisory staff shall be women wherever applicable;
- (w) The women workers who work in night shifts and regular shifts shall have a monthly meeting through their representatives with the employer once in eight weeks as grievance day and the employer shall try to comply with all just and reasonable grievances; and
- (x) The Inspector-cum-Facilitator shall strictly enforce the conditions and make it a point to take note of the non-compliance in their inspection from time to time.
- (y) Such other conditions deemed necessary by the State Government.

**56. Adequate Safety of employment of women in dangerous operations.-**

(1) No pregnant woman shall be allowed to work in a factory involved in dangerous operation, where she is likely to be exposed to hazardous substances which are carcinogenic for herself and teratogenic (for fetus).

(2) Proper dress code shall be maintained for the women workers working in dangerous operations.

(3) No women workers shall be employed in the dangerous operations against the maternity benefit provisions under the Social Security Code, 2020.

(4) All the measures as mentioned in the provisions related to dangerous operations shall be complied with.

(5) Women shall be well trained on their job, shall be rendered knowledge about the hazardous properties of the substances being handled, stored, manufactured, hazards present at their workplace,

and measures to overcome that.

(6) Women employed shall be provided with all the necessary personnel protective equipment at the workplaces, they are deployed.

(7) Women shall be trained and made aware about the means of escape in the events of fire, leakage, or spillage of hazardous substances.

(8) Pregnant women shall be deployed for work only in locations where other women worker/workers are working.

## **CHAPTER IX**

### **Special Provisions**

#### **PART-I**

#### **Contract Labour**

**57. Qualification and Criteria of the Contractor.**-For the purposes of obtaining license, the contractor as an entity or as an individual shall not be an un-discharged insolvent or convicted any time during the last two years of an offence which is criminal in nature involving offences which are liable for punishment for more than three months of imprisonment.

**58. Conditions of License.**- (1) The contractor shall ensure that:

- (a) the hours of work shall conform to the rules made under Section 25 of the Occupational Safety, Health and Working Conditions Code, 2020 (37 of 2020).
- (b) the wages shall be paid in accordance with the Code on Wages, 2019 (29 of 2020);
- (c) if the contract worker of the contractor is working at the premises of the principal employer then it shall be the responsibility of the principal employer to provide the facilities or amenities such as toilet, washroom, drinking water, bathing facilities if required, changing room, first aid box, Canteen and Crèche;
- (d) all other facilities and entitlements shall be provided by the contractor;

(2) In case the contractor fails to make payment of minimum wages to the contract worker, then the Labour Commissioner or his representative, who shall cause such payment to be made to the contract workers who have not been paid out of the security deposit maintained including by invoking the bank guarantee.

(3) He shall intimate within fifteen days of the receipt of a contract work order about the details the contract work order and in the manner as under rule 79.

**59. Form and manner of application for contractor license.-** Every application by a contractor for the grant of a license shall be made on-line electronically through official portal in **Form-XVIII** to the licensing authority along with a fee as specified in rule 75.

**60. Forms, terms and conditions of license.-** (1) Every license granted shall be in **Form-XIX**

(2) Every license granted or renewed is subject to the following conditions, namely:-

- (i) the license shall be non-transferable;
- (ii) the number of workers employed as contract labour by the contractor shall not, on any day, exceed the maximum number specified in the license;
- (iii) save as provided in these rules, the fees paid for the grant, or as the case may be, for renewal of the license shall be non-refundable;
- (v) the rates of wages payable to the workers by the contractor shall not be less than the rates prescribed under the Code on Wages, 2019 (Central Act 29 of 2020).

**61. Procedure for issue of license under sub-section (2) of section 48.-**

(1) Before a license is issued, an amount calculated at the rate of (Rupees One Thousand) Rs.1000/- for each of the workmen to be employed as contract labour, in respect of which the application for license has been made, shall be deposited by the contractor for due performance of the conditions of the license and compliance with the provisions of the Code or the rules made there under.

(2) The amount of security deposit to be deposited under sub-rule (1) shall be paid through the online portal.

(3) Wherein the issued contract license had expired, based on the request of the applicant in Form, the licensing officer may adjust the security deposit in respect of his application for new license.

(4) The fees to be paid for the grant of a license shall be as specified in the table below, namely;

1	50 but does not exceed 100 contract Labour	Rs.2000
2	101 but does not exceed 300 contract Labour	Rs.4000
3	301 but does not exceed 500contract Labour	Rs.8000
4	501 but does not exceed 1000 contract Labour	Rs.10000
5	1001 but does not exceed 3000	Rs.20000

	contract Labour	
6	3001 but does not exceed 6000 contract Labour	Rs.30000
7	6001 but does not exceed 10000 contract Labour	Rs.40000
8	10001 and above	Rs.50000

**62. Renewal and Amendment of license.-** (1) Every contractor shall apply electronically in **Form-XVIII** to the Licensing Authority for renewal of the license along with a fee as specified in rule 75.

(2) Every such application shall be submitted on the said portal atleast thirty days prior to expiry of license period but not before ninety days of such expiry of license.

(3) The security deposit and the fee chargeable for renewal of the license shall be the same as for the grant of license under rule 75:

Provided that if the application for renewal is not received within the time specified in sub-rule (2), an additional fee of twenty five per cent, shall be payable for such renewal.

(4) The License granted may be amended by applying electronically in **Form-XVIII** by giving details about the amendment with difference of Fee if any, along with copy of treasury challan/e-challan or otherwise as proof of payment.

(5) The Officer on receiving the online application electronically shall issue the amendment License within fifteen working days. The Licensing Officer, before amending the License shall verify the veracity of the details furnished in the application.

**63. Refund of security deposit.-**(1) On expiry of the period of license the contractor may, if he does not intend to have his license renewed further, make an application electronically to the licensing authority for the refund of the security deposited by him (in form of bank guarantee) along with copy of licence and notice of completion of work and bank details in which amount is required to be refunded.

(2) If the Licensing Authority is satisfied that there is no breach of the conditions of license or there is no order for the forfeiture of security deposit or any portion thereof, he shall direct the refund of the security deposit to the applicant.

(3) If there is any order directing the forfeiture of any portion of contractor's security deposit, the amount to be forfeited shall be deducted from the security deposit, and balance, if any, shall be refunded to the contractor.

(4) Any application for refund shall, as far as possible, be disposed of within thirty days of the receipt of the application.

**64. Responsibility of contractor.-** (1) The rates of wages payable to the workers by the contractor shall not be less than the rates prescribed under the Code on Wages, 2019 (Central Act 29 of 2019).

(2) In case where the worker employed by the contractor perform the same or similar kind of work as the worker directly employed by the principal employer of the establishment, the wage rates, holidays, hours of work and other conditions of service of the workers of the contractor shall be the same as applicable to the workers directly employed by the principal employer of the establishment on the same or similar kind of work. In case of any dispute whether the work is of similar kind, the matter be referred to the Licensing Authority whose decision shall be final.

(3) In other cases the wage rates, holidays, hours of work and conditions of service of the workers of the contractor shall be such as specified under the Code and rules made thereunder.

(4) All contract labourers shall be made member of EPFO and ESIC subject to applicability as under respective provisions of the Code on Social Security, 2020 (Central Act 36 of 2020).

(5) The contractor shall get his license amended, in case of any change in the number of workers or conditions of work making an application in **Form-XVIII** online to the licensing authority.

**65. Intimation of work order and time limit for intimation.-** (1) Every contractor shall within fifteen days of the receipt of a contract work order shall intimate in **Form-XX** about the contract work order containing the details such as the name of the principal employer, address of the premises where work is being undertaken, date of commencement of the contract work, the number of contract labour employed under that work order, duration of work orders.

(2) The details of work order shall be sent by the contractor or his authorized representative.

(3) The intimation shall be sent electronically on official portal of Licensing Authority.

**66. Revocation or suspension of license.-**(1) If the Licensing Authority is satisfied that the licence has been obtained by mis-representation or suppression of any material fact or if the contractor has failed to comply with the conditions subject to which licence was granted or the contractor has contravened any provision of the Part-I, Chapter-XI of the Code on wages 2019 (Central Act 29 of 2019) or rules made thereunder, the Licensing Authority shall issue a show cause notice of

fifteen days to the contractor electronically. On receipt of the reply if any, from the contractor within fifteen days, the Licensing Authority shall examine the same and in case the licensing authority finds that the continuation of contract business by the contractor is going to lead to grave harm to the workers, he may pass a speaking order recording the reasons for revocation or suspension or otherwise and communicate to the contractor electronically. A copy of the order shall be endorsed to the Chief Inspector Cum Facilitator, Inspector Cum Facilitator and concerned principal employer.

(2) If the contractor has complied with the said provisions of the codes and rules made thereunder within the stipulated time period, the Licensing Authority shall revoke the suspension giving a speaking order or else the suspension may be continued.

(3) If the contractor fails to comply with the directions as in sub-rule (1), the Licensing Authority may forth with pass an order of revocation of license, recording the reasons thereof and communicate to the contractor electronically. The copy of the order shall be endorsed electronically to the Chief Inspector Cum Facilitator, Inspector Cum Facilitator and concerned principal employer.

**67. Responsibility of Payment of wages.-** (1)The contractor shall fix the wage periods in respect of which wages shall be payable and no wage period shall exceed one month.

(2) The wages of every person employed as contract labour in an establishment or by a contractor shall be paid before the expiry of seventh day after the last day of the wage period in respect of which the wages are payable.

(3)The wages shall be disbursed only through bank transfer or electronic mode.

Provided newly employed persons may be paid wages in cash upto two months or till opening of bank Account, whichever is earlier.

**68. Making payment of wages from the security deposit amount.-**If the contractor or principal employer does not pay the wages to the contract labour employed by him, the Labour Commissioner or his representative or the competent officer as may be notified shall conduct or cause to conduct, an inquiry and after giving an opportunity to be heard to the contractor shall pass an order to make payment if any, of such wages from the amount deposited by the contractor as security deposit. The contractor shall re-furnish the security deposit within a period of fifteen days or else his license will be liable to be suspended.



**69. Experience Certificate.-** Every concerned contractor shall issue on demand, experience certificate in **Form-XXI** to the contract labour giving details of the period, work performed, experience gained in various fields performed by such contract labour.

**70. Prohibition of employment of contract labour.-**(1) If a question arises as to whether any activity of an establishment is a core activity or otherwise, the aggrieved party may make an application in **Form XXII** to the government giving reasons along with supporting documents.

(2) The Government may refer the issue to the Designated Authority who shall enquire and submit the recommendation within three months.

(3) The Government shall hear both the parties and give its decision within six months from the date of receipt of recommendation from the designated officer.

**71. Appeal under sub-section (1) of section 52.-** The appellate authority under sub-section (1) of section 52 of the Code shall be an authority notified by State Government.

## **PART II**

### **Inter-State Migrant Workers**

**72. Journey allowance to Inter-State Migrant Worker.-** (1) The employer shall pay a lump sum reasonable amount on account of fare for to & fro journey to the inter-state migrant worker by train (not less than II class sleeper) or by bus or any other mode of passenger transport from the place of employment to the place of residence in the home state if he has worked for a period of not less than 180 days in the concerned establishment(s) in preceding twelve months:

Provided that, the journey allowance shall be given to an inter-state migrant worker once in twelve months. In the event of change of employer by the inter-state migrant worker during the middle of the employment period and has not availed the journey allowance from his previous employer, then on the basis of a certificate to be given by the inter-state migrant worker, the employer where the inter-state migrant worker is now working and the such worker has completed one hundred and eighty days in preceding twelve months including the period spent with the previous employer, then the employer shall give journey allowance.

(2) Every employer or contractor who employs interstate migrant workers shall maintain a journey allowance register in **Form XXIII**.

**73. Scheme for availing benefits of public distribution system and building and other construction welfare fund.-** The inter-state migrant worker shall have option to avail benefit of the scheme under section 62 through official portal.

**74. Setting up of a Toll Free helpline number to the inter-state migrant worker.-** A Toll Free helpline number shall be provided by the Labour Department, to address queries and grievances of the migrant workers. Helpline number shall be provided by the department from the date notified.

**75. Study of inter-state migrant workers.-**The State Government may identify the studies to be carried out to promote safety, health and welfare of inter-state migrant workers. Wherever required the State Government may also consult expert organizations and different stake holders involved in the safety, health and welfare of inter-state migrant workers.

### **PART -III**

#### **Audio Visual Worker**

**76. Agreement for audio-visual worker.-** (1)The Form of agreement for the audio-visual workers with the producer is given in **Form-XXIV**.

(2) The agreement shall be registered with the competent authority as may be notified by the State Government.

(3) A copy of the agreement shall also be uploaded on the official portal of the Labour Department.

**77. Procedure for reference of disputes to a Conciliation Officer or a Tribunal.-** The procedure for reference of dispute to a conciliation officer or a tribunal shall be in conformity with the Industrial Relation Code 2020(Central Act 25 of 2020) and Rules framed there under.

### **PART IV**

#### **Beedi and Cigar Workers**

**78. Form of application for grant of licence.-** (1) Every application for licence to use or allowed to be used any place or premises as industrial premises shall make an application electronically in **Form-XXV**. The application shall be accompanied with the following documents, namely:-

(a) plan showing-

the site of such place or premises, the areas therein to be used for manufacturing processes and the immediate surroundings of such place or premises, including adjacent buildings, structures, roads, drains and the like; and

(b) the fee for the licence as specified in sub-rule (1) of rule 96 shall be paid electronically.

(2) Before granting a licence, the Licensing Authority shall also take into consideration whether the site of an industrial premises is proposed to be altered, or whether any industrial premises has been closed, by the applicant during the period of twelve months immediately preceding the date

of the application with a view to causing prejudice to the interests of the labour.

(3) Licence shall be issued in **Form XXVI** for a period of five years, on verifying the veracity of the documents within fifteen (15) working days.

(4) Every application made for grant of License is complete in all respect, if the Licensing officer does not communicate the order of granting or rejecting the license within 15 days from the date of submission of the application, the license applied for, shall be deemed to have been granted and license shall be auto generated.

**79. Form and terms and conditions of licence .-** (1) A license granted under section 74 shall be in **Form XXVI**.

(2) Every license granted or renewed section 74 shall be subject to the following conditions namely:

(i) the manufacturing process shall be carried on only in that part of the industrial premises specified for the purpose in the license;

(ii) the maximum number of employees employed in the industrial premises on any day shall not exceed the number specified in the license;

(iii) power-driven machinery not specified in the license shall not be used in the manufacturing process in the premises;

(iv) except with the prior permission in writing of the competent authority, the industrial premises shall not be extended and except with the like permission, no structural alterations shall be made in any building or such premises;

(v) the licence shall not be transferable;

**80. Renewal of Licence.-** (1) Every application for renewal of a licence under sub-section 5 of section 74 shall be made in **Form-XXV** electronically through the portal and the renewal fee as specified in sub-rule (1) of rule 96 shall be paid electronically.

(2) Every Application for renewal of license shall be submitted on the portal at least forty five days prior to expiry of the licence period.

(3) The reason for refusal of renewal of licence shall be intimated to the employer within thirty days of receipt of application under sub-rule (1).

(4) Every renewal of the Licence shall be issued on verifying the veracity of the documents within fifteen working days.

**81. Amendment of Licence.-** (1) Every application for amendment of licence shall be in **Form-XXV** and submitted electronically along with the details of the amendment sought and the difference of fee, which shall be paid electronically.

(2) Licensing Officer shall amend the licence after verifying the veracity of the amendment sought within fifteen working days.

**82. Appeal Under Section 75.-** An Appeal under section 75 of the code may be filed electronically with required fee specified under sub-rule (2) of rule 96 within a period of thirty days from the date of receipt of the order sought to be appealed against.

**83. Fees and manner of payment.-** (1) The Fees to be paid for the grant or renewal of licence under section 74 shall be as specified in the table below:

	Fees for industrial premises in which power-driven machinery is used	Fees for industrial premises in which power-driven machinery is not used
	(1)	(2)
If the number of employees proposed to be employed on any day during the financial year for which the licence is required or renewed-	Rs.	Rs.
(a) does not exceed ten	150	100
(b) exceeds ten but does not exceed twenty	300	200
(c) exceeds twenty but not exceed fifty	750	500
(d) exceeds fifty but does not exceed hundred	1500	1000
(e) exceeds hundred but does not exceed two hundred fifty	3000	2500
(f) exceeds two hundred fifty	5500	5000

(2) The fees payable in respect of an appeal under section 75 of the code shall be –

- (a) rupees five hundred – in the case of an appeal against an order refusing to grant or renew a licence in respect of any place or premises wherein the maximum number of employees proposed to be employed is one hundred or more;
- (b) rupees two hundred – in all other cases.

(3) Refund of fees. – If the competent authority refuses to grant or renew any licence under section 74, it shall order the refund of the fees paid thereof.

**84. Payment of wages to home workers.-** Where raw materials are supplied to a home worker at his home, the wages due to him shall also be paid at his home:

Provided that, an Inspector cum Facilitator may, if he considers it expedient so to do in the circumstances of any case, specify in respect of any home worker any other place or places at which wages shall be paid.

**85. Returns.-** The Employer in respect of every beedi and cigar establishments shall send to the Inspector cum Facilitator, a monthly return in **Form XXVII** on or before the 10th day of every month and annual return in **Form XXVIII** electronically or otherwise on or before the 31st January of every year.

**86. Maintenance of certain registers.-** (1) Every employer shall provide free of cost to each home worker two log-books in **Form XXIX** (hereinafter referred to as the home workers log-book) and the home-worker shall keep a record in the logbook of the quantum of raw materials received, the number of beedis or cigars supplied by him, number of standard beedies/cigars, the number of sub-standard or chat beedis/cigars, Sub standard or chat beedis/cigars. The book shall be made of good quality paper duly bound and will contain sufficient number of pages to last one year. The supply of books shall be so arranged that one book remains with the home worker at all times during the period between the two successive supplies or raw materials by the employer.

(2) Every Employer Shall maintain a home workers' employment register in **Form XXX** electronically or otherwise containing the names and particulars of all the home workers employed under him and the entries in the register shall be made and kept up-to-date on the basis of the entries in the home-workers' log books.

**87 Permission to work by employees outside industrial premises under Section 76:-**(1) The employer on behalf of the employees, engaged in wetting or cutting of beedi or tobacco leaves outside the industrial premises shall apply to the licensing authority in the labour department web portal. The licensing authority on receipt of the application through online by considering the following may issue permission through online within seven (7) days from the date of receipt of application.

(i) The employer who applies for the above permission shall have valid license issued under section 74 for such premises.

(ii) The suitability of the place where it is proposed to be used for wetting or cutting of beedi or tobacco leaves.

(iii) Wetting or cutting of beedi or tobacco leaves shall be carried on only

in that place where permission is granted.

(iv) The total number of employees employed by the employer for wetting or cutting of beedi or tobacco leaves outside the industrial premises shall not exceed the total number of workers for which issued under section 74.

(v) The licensing authority may, in addition to the foregoing terms and conditions, determine and specify in the permission such other terms and conditions, in individual cases as it may deem necessary.

(2) The employer shall maintain the record of the work permitted under sub-rule (1) to be carried outside the individual premises in **Form XXX-A**.

## **PART V**

### **Factories**

#### **88. Approval of plans and permission of establishment of factory.-**

(1) No site shall be used for the location of a factory, nor shall any building or structure be constructed, reconstructed, extended or taken into use as a factory or part of a factory, nor shall any manufacturing process be carried on in any building constructed, reconstructed or extended without the previous permission of the Chief Inspector Cum Facilitator. The previous permission of the Chief Inspector Cum Facilitator shall also be obtained for the installation of additional machinery or for the installation of prime movers exceeding the horsepower already installed in the factory.

(2) Application for permission under sub-rule (1) shall be submitted electronically in **Form-XXXI** along with a fee of Rupees Five Thousand for factories employing upto 500 workers, Rupees Ten Thousand for factories employing above 500 workers upto 1000 workers, Rupees Twenty Thousand for factories employing above 1000 workers, to be paid online to the state treasury, and shall be accompanied by the following documents, namely:-

- (a) A flow chart of the manufacturing process supplemented by a detailed description of the process in its various stages, (including the chemicals used, if any, in the various stages of the process and the steps proposed to be taken for effective removal of dust, fumes, gases and regarding the proper and effective disposal of trade wastes and effluents);
- (b) Plans drawn to scale (in pdf format), showing
  - (i) the site of the factory and the immediate surroundings including adjacent buildings and other structures, roads, drains; and
  - (ii) the plan, elevation and necessary cross sections of the various buildings, indicating all relevant details relating to natural lighting, ventilation, and means of escape in case of fire; and

- (iii) The position of the plant and machinery, aisles and passageways, the latrines and urinals and other sanitary provisions;
  - (iv) Particulars in connection with other requirements of the code and the rules and schedule thereunder applicable to the proposed factory;
  - (v) Such other particulars as the chief Inspector Cum Facilitator may require to visualize situation of the safety in factories covered under section 2(za) and section 82 of the code.
- (3) The Chief Inspector Cum Facilitator may call for such other particulars as he may require.
- (4) After examination of the documents referred to in sub-rule (2) and particulars called for, if any, under sub-rule (3), the Chief Inspector Cum Facilitator may accord the permission applied for, subject to such conditions as he may consider necessary.
- (5) If, on an application for approval of plan and permission submitted to the Chief Inspector Cum Facilitator online, no order is communicated to the applicant within the timeline stipulated under the Karnataka Sakala Services Act, 2011 (Karnataka Act 01 of 2012) from the date on which it is submitted, the plan approval applied for in the said application and permission shall be deemed to have been granted and the certificate of permission shall be auto-generated.
- (6) (a) A factory or a part of a factory constructed, reconstructed, extended or taken into use as a factory, shall be in accordance with the plans approved by the Chief Inspector Cum Facilitator and shall satisfy the conditions subject to which the plans have been approved.
- (b) No machine or prime mover or a permanent fixture, not shown in the plans approved by the Chief Inspector Cum Facilitator, shall be installed, fixed or used in any factory except in case of replacement of any machine, prime mover or permanent fixture not occupying more floor area than that already shown in the approved plans.
- (7) The plans and layouts of factory building shall be prepared by a person possessing a degree or a diploma in Civil Engineering or an equivalent qualification.
- (8) No manufacturing process shall be carried on in any factory constructed, extended or taken into use as a factory or part of a factory unless a certificate of stability in the format prescribed under this rule in respect of the building is issued by a competent person recognised by the Chief Inspector Cum Facilitator for the said purpose.
- (9) No manufacturing process shall be carried out in any premises of a factory, unless a fresh certificate of stability is issued by a competent

person recognised by the Chief Inspector Cum Facilitator for the said purpose, once in a period of every five years.

**89. Grant of Licence.** - (1) The occupier of every factory shall submit, to the Chief Inspector Cum Facilitator, an application in **Form I-B** electronically, for registration of a factory and Grant of Licence along with a fee as specified in the Table A and B (For each year).

(2) No premises shall be used as a factory nor any manufacturing process be carried on in any part of the factory except and in accordance with the registration and Licence granted under the code.

(3) A Licence may be granted for a Factory by the Chief Inspector Cum Facilitator online in **Form-XXXII** for such period, as may be specified at the time of such grant, but not exceeding fifteen years at a time.

(4) Where the Chief Inspector Cum Facilitator refuses to grant a Licence, he shall record the reasons for such refusal.

(5) If, on an application for grant of Licence, submitted to the Chief Inspector Cum Facilitator, no order is communicated to the applicant within the timeline stipulated under the Karnataka Sakala Services Act, 2011 (Karnataka Act 01 of 2012) or 30 days whichever is less from the date on which it is submitted, the registration and grant Licence applied for in the said application shall be deemed to have been approved and the Licence shall be auto-generated.

(6) The Chief Inspector Cum Facilitator shall maintain electronically, a register of Factories in **Form XXXIII** showing the particulars of Factories in relation to which Licence has been issued.

**Table - A**

Quantity of H.P Installed	Maximum number of persons to be employed on any day during the year									
	Up to 20	From 21 to 50	From 51 to 100	From 101 to 250	From 251 to 500	From 501 to 750	From 751 to 1000	From 1001 to 5000	From 5001 to 10000	From 10001 and above
Nil	Rs.1080	Rs.2160	Rs.6480	Rs.6960	Rs.16200	Rs.23760	Rs.31200	Rs.38880	Rs.46560	Rs.48600
Up to 10 HP	Rs.2160	Rs.4320	Rs.6720	Rs.15120	Rs.29160	Rs.43200	Rs.56640	Rs.64800	Rs.81000	Rs.100440
Above 10 HP up to 50 HP	Rs.4320	Rs.6240	Rs.8640	Rs.17280	Rs.31920	Rs.46080	Rs.60000	Rs.68040	Rs.87480	Rs.103680
Above 50 HP up to 100 HP	Rs.6240	Rs.8640	Rs.11280	Rs.19920	Rs.32160	Rs.49680	Rs.64800	Rs.72360	Rs.92880	Rs.110160
Above 100 HP up to 250 HP	Rs.9720	Rs.10800	Rs.12840	Rs.22680	Rs.37800	Rs.54000	Rs.72240	Rs.76800	Rs.97680	Rs.115560



Quantity of H.P Installed	Maximum number of persons to be employed on any day during the year									
	Up to 20	From 21 to 50	From 51 to 100	From 101 to 250	From 251 to 500	From 501 to 750	From 751 to 1000	From 1001 to 5000	From 5001 to 10000	From 10001 and above
Above 250 HP up to 500 HP	Rs.10800	Rs.12960	Rs.16200	Rs.26760	Rs.44280	Rs.61920	Rs.79440	Rs.89640	Rs.113400	Rs.133920
Above 500 HP up to 1000 HP	Rs.17280	Rs.19920	Rs.23760	Rs.36720	Rs.58320	Rs.81000	Rs.101520	Rs.114480	Rs.122040	Rs.169560
Above 1000 HP up to 5000 HP	Rs.21600	Rs.25920	Rs.32400	Rs.50880	Rs.82080	Rs.113400	Rs.143010	Rs.159600	Rs.205200	Rs.242400
Above 5000 HP up to 10000 HP	Rs.43200	Rs.51840	Rs.64800	Rs.101760	Rs.164160	Rs.226800	Rs.285990	Rs.319200	Rs.410400	Rs.484800
Above 10000 HP up to 25000 HP	Rs.73200	Rs.86400	Rs.97200	Rs.152640	Rs.246240	Rs.340200	Rs.429000	Rs.478800	Rs.615600	Rs.727200
Above 25000 HP	Rs.98820	Rs.116640	Rs.131220	Rs.206064	Rs.332424	Rs.459270	Rs.579150	Rs.646380	Rs.831060	Rs.981720

**Table – B**

**Scale of fees for Licence and Annual Renewal of Licence by electricity generating, transforming or transmitting factories or attached powerhouse and for heating circuits, in addition to the scale of fees payable in TABLE – A**

Sl. No.	Total Installed Capacity (in KW)	Fee Payable (in Rupees)
A	50 KW or less	Rs. 2160
B	Over 50 KW but not over 100 KW	Rs. 2640
C	Over 100 KW but not over 150 KW	Rs. 3360
D	Over 150 KW but not over 300 KW	Rs. 4800
E	Over 300 KW but not over 700 KW	Rs. 10800
F	Over 700 KW but not over 1000 KW	Rs. 19200
G	Over 1000 KW but not over 5000 KW	Rs. 27960
H	Over 5000 KW but not over 10000 KW	Rs. 46680
I	Over 10000 KW but not over 50000 KW	Rs. 77640
J	Over 50000 KW but not over 60000 KW	Rs. 93120
K	Over 60000 KW but not over 80000 KW	Rs. 108720
L	Over 80000 KW but not over 100000 KW	Rs. 124200
M	Over 100000 KW but not over 150000 KW	Rs. 155280
N	Over 150000 KW but not over 200000 KW	Rs. 185040
O	Over 200000 KW but not over 300000 KW	Rs. 217440

Sl. No.	Total Installed Capacity (in KW)	Fee Payable (in Rupees)
P	Over 300000 KW	Rs. 248400

**90. Amendment of Factory Licence.-** (1) A Licence granted under sub rule (3) of rule 5 may be amended by the Chief Inspector Cum Facilitator.

(2) (a) A Licensee shall be required to have his Licence amended if there is change in the name of the Factory, or if the Factory for which the Licence is granted deviates from the conditions specified in the Licence in regard to horse-power or Kilo-watt or number of persons employed.

(b) An application for amendment shall be made electronically in **Form-I-B**, atleast fifteen days prior to the date on which the Licensee desires to increase the amount of horse-power or Kilo Watt or the number of employees specified in the Licence.

(c) If, on an application for amendment of Licence, submitted to the Chief Inspector Cum Facilitator online, no order is communicated to the applicant within the timeline stipulated under the Karnataka Sakala Services Act, 2011 (Karnataka Act 01 of 2012) or 30 days whichever is less from the date on which it is submitted, the amendment applied for in the said application shall be deemed to have been amended and the licence shall be auto-generated.

(d) The fee for the amendment of Licence shall be rupees Two Thousand per change plus the amount (if any) by which the fee that would have been payable if the licence had originally been issued in the amended form exceeds the fee originally paid for the licence. No refund of fees shall be made to the licensee, if the fee already paid is more than the actual fees upon amendment.

**90 A. Transfer of Factory Licence:**

1) The holder of the licence shall within 30 days from the date of change in the proprietor, partners or directors apply for permission to transfer his licence to another person and also an addition or deletion of any person or persons on the licence, make an application for transfer of licence to the Chief Inspector Cum Facilitator.

2) (a) An application for transfer of licence shall be made electronically in **Form-I-B**.

(b) If, on an application for transfer of Licence, submitted to the Chief Inspector Cum Facilitator online, no order is communicated to the applicant within the timeline stipulated under the Karnataka Sakala Services Act, 2011 (Karnataka Act 01 of 2012) or 45 days

whichever is less from the date on which it is submitted, the transfer applied for in the said application shall be deemed to have been effected and the licence shall be auto-generated.

- (c) The fee for the transfer of Licence shall be Rupees Two Thousand Only.

**91. Renewal of Factory Licence.** - (1) A licence may be auto- renewed online upon payment of fees as specified in the Tables A and B(for each year) under rule 5 for such period, as may be specified at the time of such renewal, but not exceeding fifteen years at a time in **Form I-B** .

- (2) Payment of fees shall be made online prior to expiry of licence period. If the application for renewal is not made within the expiry of the licence period, an additional fee of 25% shall be payable for the year/s of renewal for which the application is delayed.
- (3) The Licensee may surrender his Licence temporarily due to closure during the ensuing year not less than one month, on which the Licence expires, for claiming exemption from renewal of Licence.
- (4) The fees paid for renewal of the Licence shall be non-refundable.

**92. Liability of owner of premises.-** (1) Where in any premises separate buildings are leased to different occupiers for use as separate factories, the owner of the premises shall be responsible for the provision and maintenance of common facilities and services, such as emergency exits and staircases leading directly to the ground in case of building having more than one floor, approach roads, drainage, water supply, lighting and sanitation.

(2) The Chief Inspector Cum Facilitator shall have, subject to the control of the State Government, power to issue orders to the owner of the premises in respect of the carrying out of the provisions of sub rule (1).

(3) Where is any premises, independent or self-contained, floors or flats are leased to different occupiers for use as separate factories, the owner of the premises shall also be liable as if he were the occupier or manager of a factory, for any contravention of the provisions of this code in respect of—

- (i) latrines, urinals and washing facilities in so far as the maintenance of the common supply of water for these purposes is concerned;
  - (ii) fencing of machinery and plant belonging to the owner and not specifically entrusted to the custody of user or an occupier;
  - (iii) safe means of access to the floors or flats and maintenance and cleanliness of staircases and common passages;
  - (iv) precautions in case of fire;
- (4) maintenance of hoists and lifts; and

(5) Maintenance of any other common facilities provided in the premises.

(6) The Chief Inspector Cum Facilitator shall have the power to issue orders to the owner of the premises in respect of carrying out the provisions of sub-rule (3) and sub-rule (5).

(7) The provisions of sub-rule (3) relating to the liability of the owner shall apply where in any premises independent rooms with common latrines, urinals and washing facilities are leased to different occupiers for use as separate factories: Provided that the owner shall be responsible also for complying with the requirements relating to the provision and maintenance of latrines, urinals and washing facilities.

(8) Where in any premises portions of a room or a shed are leased to different occupiers for use as separate factories, the owner of the premises shall be liable for any contravention of the provisions.

(9) Provided further that the occupier shall also be responsible for complying with all the safety related provisions of all the code.

**93. Occupational Health Centres.-** (1) In respect of any factory carrying on "hazardous process", there shall be provided and maintained in good order an Occupational Health Centre with the services and facilities as per scale laid down hereunder:—

**(a) For factories employing upto fifty workers:—**

(i) the services of a Factory Medical Officer on retainer ship basis, in his clinic to be notified by the occupier. He will carry out the pre-employment and periodical medical examination and render medical assistance during any emergency.

(ii) a minimum of five persons trained in first-aid procedures amongst whom atleast two shall always be available during the working period.

(iii) a fully equipped first-aid box.

**(b) For factories employing 51 to 200 workers:—**

(i) an Occupational Health Centre having a room with a minimum floor area of 15 sq. m., with floors and walls made of smooth and impervious surface and with adequate illumination and ventilation as well as equipment as per the schedule annexed to this rule.

(ii) a part-time Factory Medical Officer shall be in overall charge of the Centre who shall visit the factory atleast twice in a week and

whose services shall be readily available during medical emergencies;

(iii) one qualified and trained dresser-cum-compounder on duty throughout the working period;

(iv) a fully equipped first aid box in all the departments;

**(c) For factories employing above 200 workers.—**

(i) One full time Factory Medical Officer for factories employing upto 500 workers and one more Medical Officer for every additional 1000 workers or part thereof;

(ii) An Occupational Health Centre having atleast 2 rooms each with a minimum floor area of 15 sq. metres with floors and walls made of smooth and impervious surface and adequate illumination and ventilation as well as equipment as per the schedule annexed to this rule.

(iii) There shall be one nurse, one dresser- cum-compounder and one sweeper-cum ward boy throughout the working period;

(v) The Occupational Health Centre shall be suitably equipped to manage medical emergencies.

(vi) When more than one Factory Medical Officer are appointed, they shall be employed in shifts

(2) The Factory Medical Officer required to be appointed under sub-rule (1) shall have qualification as defined in the National Medical Commission Act, 2019 (Central Act 30 of 2019) and who is enrolled on Indian Medical Register or on a State Medical Register as defined in that Act, and Diploma in Industrial health or Associate Fellowship in Industrial Health (AFIH) or equivalent post graduate certificate of training in industrial health of minimum three months duration—recognized by the Central or State Government.

Provided that the Chief Inspector Cum Facilitator may, subject to such conditions as he may specify, grant exemption from the requirement of this sub-rule, if in his opinion, a suitable person possessing the necessary qualification is not available for appointment;

(3) Within one month of the appointment of Factory Medical Officer, the occupier of the factory shall furnish to the Chief Inspector Cum Facilitator the following particulars:—

(a) Name and address of the Factory Medical Officer;

(b) Qualifications;

(c) Experience, if any; and

(d) The provision under which he is appointed.

### **Equipment for Occupational Health Centre in Factories**

1. A glazed sink with hot and cold water also available
2. A Table with a smooth top atleast 180 cm x 105 cm.
3. Means for sterilising instruments
4. A couch
5. Two buckets or containers with close fitting lids
6. A kettle and spirit stove or other suitable means of boiling water
7. One bottle of spifitws ammoniac aromaticus (120 ml.)
8. Two kidney trays
9. Two medium size sponges
10. Four cakes of toilet, preferably antiseptic soap
11. Two glass tumblers and two wine glasses
12. Two clinical thermometers
13. Two teaspoons
14. Two graduated (120 ml.) measuring glasses
15. One wash bottle (1000 cc.) for washing eyes
16. One bottle (one litre) carbolic lotion 1 in 20
17. Three Chairs
18. One screen
19. One electric hand torch
20. An adequate supply of tetanus toxoid
21. Coramine liquid (60 ml.)
22. Tablets — antihistaminic, antispasmodic (25 each)
22. Syringes with needles - 2 cc, 5 cc. and 10 cc.
23. Two needle holders, big and small
24. Suturing needles and materials
25. One dissecting forceps
26. One dressing forceps
27. One scapel
28. One stethoscope
29. Rubber bandage—pressure bandage
30. Oxygen cylinder with necessary attachments
31. One blood pressure apparatus
32. One patellar hammer
33. One peak-flow metre for lung function measurement
34. One stomach wash set
35. Any other equipment recommended by the Factory Medical Officer according to specific need relating to manufacturing process.
36. In addition—

#### **(1) For factories employing 51 to 200 workers:**

1. Four plain wooden splints 900 mm. x 100 mm. x 6 mm.
2. Four plain wooden splints 350 mm. x 75 mm. x 6 mm.
3. Two plain wooden splints 250 mm. x 50 mm. x 12 mm.

4. One pair artery forceps
5. Injections — morphia, pethidine, atropine, adrenaline, coramine, novocan (2 each)
6. One surgical scissor

**(2) For factories employing above 200 workers:**

1. Eight plain wooden splints 900 mm. x 100 mm. x 6 mm.
2. Eight plain wooden splints 350 mm. x 75 mm. x 6 mm.
3. Four plain wooden splints 250 mm. x 50 mm. x 12 mm.
4. Two pairs artery forceps
5. Injections - morphia, pethidine, atropine, adrenaline, coramine, novocan (4 each)
6. Two surgical scissors

**94. Ambulance Van.-** (1) In every factory carrying on 'hazardous process', there shall be provided and maintained in good condition, a suitably constructed ambulance van equipped with items under sub-rule (2) and manned by a full-time Driver cum Mechanic and a Helper, trained in first-aid, for the purposes of transportation of serious cases of accidents or sickness. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and shall normally be stationed at or near to the Occupational Health Centre:

Provided that a factory employing less than 200 workers, may make arrangements and written agreement for procuring such facility at short notice from a nearby hospital or other places, to meet any emergency.

(2) The number of ambulance vans provided shall be one for every 5000 workers employed

(2) The Ambulance shall have the following equipment:

**(a) General**

- A wheeled stretcher with folding and adjusting devices, with the head of the stretcher capable of being tilted upward;
- Fixed suction unit with equipment;
- Fixed oxygen supply with equipment;
- Pillow with case, Sheets, Blankets and Towels;
- Emesis bag, Bed pan, Urinal and Glass.

**(b) Safety Equipment**

- Flares with life of 30 minutes;—Floodlights;
- Flashlights and Fire extinguisher dry powder type;
- Insulated gauntlets.

**(c) Emergency Care Equipment**

**(i) Resuscitation**

- Portable suction unit, Portable oxygen units;
- Bag-valve-mask, hand operated artificial ventilation unit;
- Airways, Mouth gags, Tracheostomy adaptors;
- Short spine board — I.V. Fluids with administration unit;
- B.P. Manometer, Cugo and Stethoscope.

**(ii) Immobilization**

- Long and short padded boards — Wire ladder splints;
- Triangular bandage — Long and short spine boards.

**(iii) Dressings**

- Gauze pads — 100 mm. x 100 mm. — Universal dressing 25 mm. x 900 mm.
- Roll of aluminium foils; — soft roller bandages 150 mm. 5 mts.;, Adhesive tape in 75 mm. roll, Safety pins;
- Bandage sheets, Burn jelly.

**(iv) Poisoning**

- Syrup of Ipecac and Activated Charcoal
- **Pre-packeted in doses and Snake-bite Kit;**
- Drinking water.

**(v) Emergency Medicines**

- As per requirement (under the advice of Medical Officer only)

**95. Decontamination facilities.**— In every factory, carrying out 'hazardous process', the following provisions shall be made to meet emergency:—

- (a) fully equipped first aid box;
- (b) readily accessible means of drenching with water for washing by workers as well as for drenching the clothing of workers who have been contaminated with hazardous and corrosive substance; and such means shall be as per the scale shown below:—

<b>No. of persons employed at any time</b>	<b>No. of drenching showers</b>
(i) Upto 50 workers	2
(ii) Between 51 to 200 workers	2+1 for every additional 50 or part thereof
(iii) Between 201 to 500 workers	5+1 for every additional 100 or part thereof
(iv) 501 workers and above	8+1 for every additional 200 or part thereof

- (c) a sufficient number of eye wash bottles filled with distilled water or suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.



**96. Dangerous Manufacturing Processes or Operations:-** (1) The following manufacturing processes and operations when carried on in any factory are declared to be dangerous operations or processes under section 82 of the Code:

- (i) Manufacture of aerated waters and other bottling processes.
- (ii) Phosphating, Electrolytic plating or oxidation of metal articles by use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold etc.
- (iii) Manufacture and repair of Electric Accumulators
- (iv) Glass manufacture
- (v) Grinding or glazing of metals and processes incidental thereto
- (vi) Manufacture and treatment of Lead and certain compounds of Lead
- (vii) Generation of gas from dangerous petroleum
- (viii) Cleaning Smoothing Roughening etc., of articles by a jet of sand metal shot or grit or other abrasive propelled by a blast of compressed air or steam
- (ix) Liming and Tanning of raw hides and skins, Wet Leather finishing and processes incidental thereto
- (x) Painting, Powder Coating, Printing and process incidental thereto
- (xi) Graphite Powdering
- (xii) Printing Press And Type Foundries - Certain Lead process carried on therein
- (xiii) Cashew nut processing.
- (xiv) Dyeing, Stenciling, Printing and incidental processes
- (xv) Pottery
- (xvi) Chemical Works
- (xvii) Manufacture of Dichromates
- (xviii) Compression of Oxygen and Hydrogen produced by the electrolysis of water
- (xix) Manipulation of stone or any other material containing free silica
- (xx) Handling and processing of Asbestos, Manufacture of any article or substance of Asbestos and any other process of manufacture or otherwise in which asbestos is used in any form.
- (xxi) Handling and manipulation of Corrosive Substances
- (xxii) Manufacture or Manipulation Of Carcinogenic Dye Intermediates
- (xxiii) Process of Extracting Oils And Fats In Solvent Extraction Plants
- (xxiv) Fire Works Manufactories and Match Factories

- (xxv) Manufacture or Manipulation of Manganese and its Compounds
- (xxvi) Carbon-Disulphide Plants
- (xxvii) Manufacture, handling and use of Benzene
- (xxviii) Operations involving High Noise and Vibration Levels
- (xxix) Manufacture or manipulation of dangerous pesticides.
- (xxx) Manufacture of Rayon by Viscose Process.
- (xxxi) Flammable Liquefied Or Compressed Gases And Highly Flammable Liquids
- (xxxii) Operations In Foundries And Furnaces
- (xxxiii) Operations Involving Compressed Air Working Environment
- (xxxiv) Welding, Soldering and Brazing
- (xxxv) Manufacturing and processing of textiles
- (xxxvi) Processsing of Rubber and plastic compounds
- (xxxvii) Forging, Forming, Heat Treatment and incidental processes
- (xxxviii) Manufacturing of Paper, Paper boards and allied products
- (xxxix) Operation of Textile Machinery except Machinery used in Jute Mills.
- (xl) Cotton Ginning
- (xli) Operation of Wood Working Machinery
- (xlii) Operation of Rubber Mills
- (xliii) Operation of Centrifugal Machines
- (xliv) Operation of Power Press
- (xlv) Operation of Shears, Slitters and Guillotine Machines
- (xlvi) Operation of Thermic Fluid Heaters
- (xlvii) Graphite powdering and incidental process
- (xlviii) Curing, Canning or other processing of fish.
- (xlix) Manufacture of chromic acid or manufacture or recovery of the bichromate of sodium, potassium or ammonium; and
- (l) Dyeing, stenciling and pointing of mats, matting and carpets in Coir and Fiber factories.
  - (li) Cellulose Spraying.
  - (lii) Operation of Reaction vessels and kettles
  - (liii) Operation of Ovens & Driers
- (liv) (2) The provisions specified in the schedules - **N to AY** shall apply to any class or description of factories wherein dangerous operations or processes specified in each schedule are carried out.
- (lv) (3) If in respect of any factory or a part thereof, the Chief Inspector-cum-Facilitator is satisfied that owing to the exceptional circumstances or infrequency of the processes or for any other reason, all or any of the schedules is not necessary for protection of the workers in the factory, the Chief Inspector-cum-Facilitator may by a certificate in writing, which he may at

his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he may specify therein.

- (lvi) (4) Notwithstanding the provisions specified in the Schedules-**N to AY**, the Inspector-cum-Facilitator may by issue of orders in writing to the occupier, direct them to carry out such measures, and within such time, as may be specified in such order with a view to remove conditions dangerous to the health of the workers, or to suspend any process, where such process constitutes, in the opinion of the Inspector-cum-Facilitator, imminent danger of poisoning or toxicity.
- (lvii) (5) Any register or record of medical examinations and tests connected therewith required to be carried out under any of the schedules annexed hereto in respect of any worker shall be kept readily available to the Inspector-cum-Facilitator and shall be preserved till the expiry of one year after the worker ceases to be in employment of the factory.
- (lviii) (6) First employment' means employment for the first time in a hazardous operation or process so notified under Section 82, or re-employment therein after cessation of employment in such process or operation for a period exceeding three calendar months.
- (lix) (7) Without prejudice to the medical examination mentioned in rule 19, the workers above 40 years of age shall be subjected to the medical examination as per the provisions of the annexed schedules.

**97. Site Appraisal Committee.**— (1) The State Government may, for purposes of advising it to consider applications for grant of permission for the initial location of a factory involving a hazardous process or for the expansion of any such factory, appoint a Site Appraisal Committee consisting of—

- (a) The Chief Inspector Cum Facilitator of the State who shall be its Chairman;
- (b) a representative of the State Pollution Board;
- (c) a representative of the Department of Environment in the State;
- (d) a representative of the Meteorological Department of the Government of India;
- (e) an expert in the field of occupational health; and
- (f) a representative of the Town and country Planning Department of the State Government, and not more than five other members who may be co-opted by the State Government who shall be—

- (i) a scientist having specialised knowledge of the hazardous process which will be involved in the factory,
- (ii) not more than three other persons as deemed fit by the State Government.

(2) The Site Appraisal Committee shall examine an application for the establishment of a factory involving hazardous process and make its recommendation to the State Government within a period of ninety days of the receipt of such application in the prescribed form.

(3) Where any process relates to a factory owned or controlled by the Central Government or to a corporation or a company owned or controlled by the Central Government, the State Government shall co-opt in the Site Appraisal Committee a representative nominated by the Central Government as a member of that Committee.

(4) The Site Appraisal Committee shall have power to call for any information from the person making an application for the establishment or expansion of a factory involving a hazardous process.

(5) Application to the Site Appraisal Committee shall be submitted in **Form XXXIV**.

**98. Disclosure of information to workers:-** (1) The occupier of a factory carrying on a 'hazardous process' shall disclose to all workers the following information in relation to handling of hazardous materials or substances in the manufacture, transportation, storage and other processes, namely:—

- (a) Requirements of Section 84 of the code;
- (b) A list of hazardous processes' carried on in the factory;
- (c) Location and availability of all safety data sheets.
- (d) Physical and health hazards arising from the exposure to or handling of the substances;
- (e) Measures taken by the occupier to ensure safety and control of physical and health hazards;
- (f) Measures to be taken by the workers to ensure safe handling, storage and transportation of hazardous substances;
- (g) Personal Protective Equipment required to be used by workers employed in 'hazardous process' or 'dangerous operations';
- (h) Meaning of various labels and markings used on the containers of hazardous substance;

- (i) Signs and symptoms likely to be manifested on exposure to hazardous substances and to whom to report;
- (j) Measures to be taken by the workers in case of any spillage or leakage of a hazardous substance;
- (k) Role of workers vis-a-vis the emergency plan of the factory, in particular the evacuation procedures.
- (l) Any other information considered necessary by the occupier to ensure safety and health of workers.

(2) The information required by sub-rule (1) shall be compiled and made known to workers individually through supply of booklets or leaflets and display of cautionary notices at the work places.

(3) The booklets, leaflets and cautionary notices displayed in the factory shall be in the language understood by the majority of the workers, and shall also be explained to them.

(4) The Chief Inspector Cum Facilitator may direct the occupier to supply further information to the workers as deemed necessary.

**99. Disclosure of Information to the Chief Inspector Cum Facilitator.-**

(1) The occupier of every factory carrying on 'hazardous process' shall furnish, in writing, to the Chief Inspector Cum Facilitator a copy of all the information furnished to the workers.

(2) A copy of compilation of material safety data sheets in respect hazardous substances used, produced or stored in the factory shall be furnished to the Chief Inspector Cum Facilitator, and the local Inspector Cum Facilitator.

(3) The occupier shall also furnish any other information asked for by the Chief Inspector Cum Facilitator from time to time for the purpose of the Act and these rules.

(4) The Information desired under this rule shall be furnished either manually or electronically in **Form XXXV**.

**100. Review of the Information furnished to workers, etc.,-** (1) The occupier shall review once in every calendar year and modify, if necessary, the information furnished under rules 106 and 107 to the workers and the Chief Inspector Cum Facilitator.

(2) In the event of any change in the process or operations or methods of work or when any new substance is introduced in the process or in the event of a serious accident taking place, the information so furnished shall be reviewed and modified to the extent necessary.

**101. Medical Examination.-** (1) Workers employed in a 'hazardous process' and workers handling hazardous waste as specified under the Hazardous Waste Management Act, 2008 (Central Act) shall be medically examined by the factory medical officer in following manner:-

- (a) Once before employment, to ascertain physical fitness of the person to do the particular job;
- (b) Once in a period of six months, to ascertain the health status of all the workers in respect of occupational health hazards to which they are exposed; and in cases wherein the opinion of the Factory Medical Officer it is necessary to do so, at a shorter interval in respect of any workers;

(2) The details of pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the Health Register in **Form XXXVI**.

(3) No person shall be employed for the first time without a certificate of Fitness in **Form XXXIV** granted by the medical Officer. If the medical officer declares a person unfit for being employed in any hazardous process covered under section 2(ZA) of the code, such a person shall have the right to appeal to the Inspector Cum Facilitator-cum Facilitator, who shall refer the matter to the medical Inspector Cum Facilitator whose opinion shall be final in this regard. If the Inspector Cum Facilitator himself is also a medical officer, he may dispose of application himself.

(4) Any findings of the medical officer revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the medical Inspector Cum Facilitator who shall in turn, examine the concerned worker and communicate his findings to the occupier within 30 days. If the medical Inspector Cum Facilitator is of the opinion that the worker so examined is required to be taken away from the process for health protection, he will direct the occupier accordingly, who shall not employ the said worker in the same process. However, the worker so taken away be provided with alternate placement unless he is fully incapacitated, in the opinion of the medical officer, in that case the worker effected shall be suitably rehabilitated :

Provided that, the medical Inspector Cum Facilitator on his own examine any worker when he considers it necessary to do so far ascertaining the suitability of his employment in the 'hazardous process' or for ascertaining the health states of any worker.

(5) The worker taken away from employment in any process under sub-rule (4) may be employed again in the same process only after obtaining

the Fitness Certificate from the factory medical officer and after making entries to that effect in the Health Register.

(6) A medical Inspector Cum Facilitator on his own motion or on a reference from an Inspector Cum Facilitator may conduct medical examination of a worker to ascertain the suitability of his employment in a hazardous process or for ascertaining his health status. The opinion of the medical Inspector Cum Facilitator in such a case shall be final. The fee required for this medical examination shall be paid by the occupier.

(7) An Inspector Cum Facilitator may if he deems it necessary to do so, refer a worker to the medical officer or medical Inspector Cum Facilitator for medical examination as required under sub-rule (1).

(8) The worker required to undergo medical examination under these rules and for any medical survey conducted by or on before of the Central or the State Government shall not refuse to undergo such medical examination

**102. Confidentiality of Information.-** (1) The occupier of a factory carrying on 'hazardous process' shall disclose all information needed for protecting safety and health of the workers to:—

(a) his workers as required under rule 98 and

(b) Chief Inspector Cum Facilitator as required under rule 99.

(2) If the occupier is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interests, he may make a representation to the Chief Inspector Cum Facilitator stating the reasons for withholding such information. The Chief Inspector Cum Facilitator shall give an opportunity to the occupier of being heard and pass an order on the representation.

(3) An occupier aggrieved by an order of Chief Inspector Cum Facilitator may prefer an appeal before the State Government within a period of thirty days. The State Government shall give an opportunity to the occupier of being heard and pass an order. The order of the State Government shall be final.

**103. Permissible levels of certain chemical substances in work environment.-** Without prejudice to the requirements in any other provisions in the Act or the rules, requirements specified in **Schedule-AZ** shall apply to all factories.

**104. Collection and development and dissemination of information.-** (1) The occupier of every factory carrying on a 'hazardous process' shall arrange to obtain or develop information in the form of Safety Data Sheet (SDS), in respect of every hazardous substance or material

handled in the manufacture, transportation and storage in the factory. It shall be accessible upon request to a worker for reference.

(a) Every such Material Safety Data Sheet shall include the following information:—

- (i) The identity used on the label;
- (ii) Hazardous ingredients of the substance;
- (iii) Physical and Chemical characteristics of the hazardous substance;
- (iv) The physical hazards of the hazardous substance, including the potential for fire, explosion and reactivity;
- (i) The health hazards of the hazardous substance, including signs and symptoms of exposure, and any medical conditions which are generally recognised as being aggravated by exposure to the substance;
- (ii) The primary route(s) of entry;
- (iii) The permissible limits of exposure prescribed in the Schedule appended to this rule, and in respect of a Chemical not covered by the said Schedule, any exposure limit used or recommended by the manufacturer, importer or occupier;
- (iv) Any generally applicable precautions for safe handling and use of the hazardous substance, which are known, including appropriate hygienic practices, protective measures during repairs and maintenance of contaminated equipment, procedures for clean-up of spills and leaks;
- (v) Any generally applicable control measures, such as appropriate engineering controls, work practices, or use of personal protective equipment;
- (vi) Emergency and first aid procedures;
- (vii) The date of preparation of the material safety data sheet, or the last change to it; and
- (viii) The name, address and telephone number of the manufacturer, importer, occupier or other responsible party preparing or distributing the material safety data sheet, who can provide additional information on the hazardous substance and appropriate emergency procedures, if necessary.

(b) The occupier, while obtaining or developing a material safety data sheet in respect of a hazardous substance shall ensure that the information recorded, accurately reflects the scientific evidence used in making the hazard determination. If he becomes newly aware of any significant information regarding the hazards of a substance, or ways to protect against the hazards, this new information shall be added to the material safety data sheet as soon as practicable.

(c) An example of such material safety data sheet is given in **Schedule-BA.**



(2) Labelling:- Every container of a hazardous substance shall be clearly labelled or marked to identify:

- (a) the contents of the container;
- (b) the name and address of the manufacturer or importer of the hazardous substance;
- (c) the physical and health hazards; and
- (d) the recommended personal protective equipment needed to work safely with such hazardous substance.

(3) Hazard evaluation studies like ~~safety audit~~, fault free analysis, event free analysis, HAZOP study of all the hazardous processes and operations carried out after every twelve months (or as and when necessary in case of HAZOP).

**105. Health and Safety Policy.-** (1) The occupier of every factory, except as provided for in sub-rule (2), shall prepare a written statement of his policy in respect of health and safety of workers at work.

(2) All factories,

- (i) covered under section 2 (w) (i) but employing less than fifty workers;
- (ii) covered under section 2 (w) (ii) but employing less than one hundred workers;

Provided that, they are not covered under the First Schedule under section 2 (za) or carrying out processes or operations declared to be dangerous under section 82 of the Code.

(3) Notwithstanding anything contained in sub-rule (2), the Chief Inspector Cum Facilitator may require the occupiers of any of the factories or class or description or factories to comply with the requirements of sub-rule (1), if, in his opinion, it is expedient to do so.

(4) The health and safety policy should contain or deal with:

- (a) declared intention and commitment of the top management to health, safety and environment and compliance with all the relevant statutory requirements;
- (b) organizational set up to carry out the declared policy clearly assigning the responsibility at different levels; and
- (c) arrangements for making the policy effective.

(5) In particular, the policy should specify the following:—

- (a) arrangements for involving the workers;

(b) intention of taking into account the health and safety performance of individuals at different levels while considering their career advancement;

(c) fixing the responsibility of the contractors, subcontractors, transporters and other agencies entering the premises;

(d) providing a resume of health and safety performance of the factory in its Annual Report;

(e) relevant techniques and methods, such as safety audits and risk assessment for periodical assessment of the status on health, safety and environment and taking all the remedial measures;

(f) stating its intentions to integrate health and safety, in all decisions including those dealing with purchase of plant, equipment, machinery and material as well as selection and placement of personnel; and

(g) arrangements for informing, educating and training and retraining its own employees at different levels and the public, wherever required.

(6) A copy of the declared Health and Safety Policy signed by the occupier shall be made available to the Inspector Cum Facilitator having jurisdiction over the factory and to the Chief Inspector Cum Facilitator.

(7) The policy shall be made widely known by:—

(a) making copies available to all workers including contract workers, apprentices, transport workers, suppliers, etc.;

(b) displaying copies of the policy at conspicuous places; and

(c) any other means of communication in a language understood by majority of workers.

(8) The occupier shall revise the Health and Safety Policy as often as may be appropriate, but it shall necessarily be revised under the following circumstances:—

(a) whenever any expansion or modification having implications on safety and health of persons at work is made; or

(b) whenever new substance(s) or articles are introduced in the manufacturing process having implications on health and safety of persons exposed to such substances.

**106. Information on industrial wastes.-** (1) The information furnished under Section 84 and 85 shall include the quantity of the solid

and liquid wastes generated per day, their characteristics and the method of treatment such as incineration of solid wastes, chemical and biological treatment of liquid wastes, and arrangements for their final disposal.

(2) It shall also include information on the quality and quantity of gaseous waste discharged through the stacks or other openings, and arrangements such as provision of scrubbers, cyclone separators, electrostatic precipitators or similar such arrangements made for controlling pollution of the environment.

(3) For the purpose of compliance with the requirements of provisions of section 84 and 85 of the code, the Chief Inspector Cum Facilitator, if deemed necessary, issue guidelines from time to time to the occupier of factories carrying on 'hazardous process'. Such guidelines may be based on National Standards, Codes of Practice or recommendations of International Bodies such as ILO (International Labour Organization) and WHO (World Health Organization).

**107. Accessibility of Health Record of Workers.**-(1) The occupier of every factory carrying out 'hazardous process' or carrying out processes or operations declared to be dangerous under section 82 of the Code shall make available the health records including the record of worker's exposure to hazardous process or, as the case may be, under the following conditions:—

- (a) Once in every year or immediately after the medical examination whichever is earlier;
- (b) If the Factory Medical Officer or the Medical Officer, as the case may be, is of the opinion that the worker has manifested signs and symptoms of any notifiable diseases as specified in the third schedule of the Act;
- (c) If the worker leaves the employment;
- (d) If any one of the following authorities so direct;
  - (i) The Chief Inspector Cum Facilitator
  - (ii) The Health Authority of the Central or State Government
  - (iii) Commissioner of Workmen's compensation
  - (iv) The Director General, Employees State Insurance Corporation
  - (v) The Director, Employees State Insurance Corporation; (Medical Benefits); and
  - (vi) The Director General, Factory-Advice Service and Labour Institutes.

(2) A copy of the up-to-date health records including the record of worker's exposure to hazardous process or, as the case may be, the medical records shall be supplied to the worker on receipt of an application from him. X-ray plates and other medical diagnostic reports may also be made available for reference to his Medical Practitioner.

(3) If Occupier of a factory is of the opinion that the disclosure of details regarding the process and formulations will adversely affect his business interests, he may make a representation to the Chief Inspector Cum Facilitator stating the reasons for withholding such information. The Chief Inspector Cum Facilitator shall give an opportunity to the occupier of being heard and pass an order. The occupier may prefer an appeal before the State Government within 30 days of receiving the order. The State Government shall give an opportunity to the occupier of being heard and pass an order. The order of the State Government shall be final.

**108. Qualification of Supervisors handling Hazardous Substances.-** (1) All persons who are required to supervise the handling of hazardous substances shall possess the following qualifications and experience :-

- (a) (i) A degree in Chemistry or Diploma in Chemical Engineering or Technology with 5 years experience; or
- (ii) A Master's Degree in Chemistry or a Degree in Chemical Engineering or Technology with 2 years experience.
- (iii) The experience stipulated above shall be in operation and maintenance department in the Chemical process Industry.

(2) The Chief Inspector Cum Facilitator may require the supervisor to undergo training in Health and Safety. The syllabus and duration of the training in health and safety and the organisation conducting the training shall be approved by the DGFASLI or the State Government in accordance with the guideline issued by the DGFASLI.

**109. Appeal against the Order of Inspector Cum Facilitator.-** (1) An appeal against the orders of an Inspector cum Facilitator under Section 90 of the code shall lie to the Chief Inspector cum Facilitator. The appeal shall be filed within thirty days of the receipt of the order and the appellate authority after giving both parties an opportunity of being heard, shall either reject the application or decide in any manner it deems fit:

Provided that the appellate authority may if it is satisfied that the appellant was prevented by sufficient cause from preferring the appeal within the said period of thirty days, extend the said period by further period of thirty days.

(2) All appeals under sub-rule (1) shall be in the form of a memorandum

setting forth concisely the grounds of objection to the order and shall be accompanied by a certified copy of the order appealed against, duly signed by the appellant or, on his behalf, by a duly authorised agent or legal practitioner.

(3) On receipt of the memorandum of appeal, the appellate authority shall, if it thinks fit or if the appellant has requested that appeal should be heard with the aid of assessors call upon the body declared under sub-rule (4) to be representative of the industry concerned, to appoint an assessor within a period of fourteen days, if an assessor is nominated by such body, the appellate authority shall appoint a second assessor itself. It shall then fix a date for the hearing of the appeal and shall give the notice of such date to the appellant and to the Inspector Cum Facilitator whose order is appealed against, and shall call upon the two assessors to appear upon such date to assist in the hearing of the appeal.

(4) The appellant shall state in the memorandum presented under sub-rule (1) whether he is a member of one or more of the following bodies. The body empowered to appoint the assessor shall-

- (a) if the appellant is a member of one of such bodies, be that body;
- (b) if he is a member of two such bodies, be the body which the appellant desires should appoint such assessor; and
- (c) if the appellant is not a member of any of the aforesaid bodies or if he does not state in the memorandum which of such bodies he desires should appoint the assessor, be the body which the appellate authority as the best fitted to represent the industry concerned.

(5) An appeal under section 90 of the Code shall be preferred to the Chief Inspector-cum-Facilitator, or in cases where the order appealed against is an order passed by that officer, to the State Government or to such authority as the State Government may appoint in this behalf and shall be in the form of a memorandum setting forth concisely the grounds of objection to the order along with prescribed fee notified by the State Government from time to time.

## **PART- VI**

### **Plantation**

**110. Housing accommodation for plantation workers.-** Every plantation employer shall provide every worker and his family residing in a plantation, housing accommodation as near as possible to the place of work. It shall be open to an employer to provide such accommodation in the course of several years provided that houses shall be built for atleast eight percent of the resident workers every year.

**111. Standard and specification of housing accommodation.-** All housing accommodation for workers in a plantation shall have separate rooms for women employees. Effective and suitable provision shall be made in every room for securing and maintaining adequate ventilation by the circulation of fresh air and there shall also be provided and maintained sufficient and suitable natural or artificial lighting. The rooms or other suitable alternative accommodation shall be of such dimensions so as to provide atleast a floor area of 10 square meters excluding area of kitchen and toilet for each person making use of the room. The accommodations shall be so constructed as to afford adequate protection against heat, wind, rain and shall have smooth, hard and impervious floor surface.

**112. Sites for housing accommodation.-**

- (i) The housing accommodation shall be provided on dry well drained land which, consistent with the requirement regarding distance from the plantation, has supplies of wholesome drinking water within a reasonable distance. In malarial tracts, the house shall be provided at a safe distance from the swamps and marshes and above the highest flood level.
- (ii) Adequate electric lighting shall be provided by the employer in the houses provided for the workers and also in and around the area in which housing accommodation is provided.
- (iii) The employer shall maintain in good condition of the approach roads and parts to the area where houses are located as also the sewers and drains in that area.
- (iv) The employer shall not deny the public free access to those parts of the plantation where the workers are housed.
- (v) The employer shall cause the vicinity of all houses to be kept clear of refuse and excreta and the latrines and drains to be cleaned out daily and all refuse in or near them to be collected, removed and disposed of hygienically.

**113. Maintenance of houses.-**

- (i) The employer shall, at his own expense, execute such repairs to the houses as may be required from time to time and maintain the houses in fit and safe condition for occupation.
- (ii) A worker occupying a house may, and Inspector-cum-Facilitator appointed under this Code shall bring to the notice of the employer any defects in the condition of a house which make it dangerous to the health and safety of the worker. Where an Inspector-cum-Facilitator so brings any such defects to notice, it shall be the duty of the employer to rectify them with the least possible delay.

The employer shall get all the houses lime-washed atleast once every year and all the doors, windows and other wooden structure varnished or painted once in three years.

**114. Accommodation to be rent free.**– No rent shall be charged by an employer for the housing accommodation provided to workers and their families residing in his plantation.

**115. Occupation of Houses.**–

- (i) Houses shall be allotted on the basis of one house for a worker and his family:

Provided that if there are two or more workers in a family, only one house shall be allotted in respect of any such family in the name of any worker in the family:

Provided further that in the case of termination of services of a worker, in whose name a house is allotted under the preceding proviso, the said house or any other standard house shall be re allotted in the name of any other member of his family, who is a worker:

Provided also, that it shall be open to the employer to allot houses to workers not having families at the rate of one house for not more than four such workers.

- (ii) The occupant of a house shall not make any unauthorised additions to or alterations in the house.
- (iii) The occupant shall not exchange the house with the occupant of another house except with the written permission of the employer.
- (iv) The occupant shall not let the house or any portion thereof to any person.
- (v) All workers and members of their families occupying the houses shall use the latrines provided and shall not pollute the soil and shall keep the houses and the precincts thereof clean and tidy and shall not waste drinking water.
- (vi) No cattle or goats shall be kept in the living rooms or verandahs and no windows or air spaces shall be blocked up.
- (vii) The employer shall bring to the notice of each worker to whom housing accommodation has been provided, the conditions governing the occupation of such accommodation, in writing, in a language which the latter can understand.

**116. Occupation of accommodation after termination of employment.**–

(1) When a worker dies while in service of the employer, or retires or goes on transfer, or resigns, or goes on leave or when his services are terminated he or his family may retain the house up to the period as detailed below:-

- (i) in the case of death, a period not exceeding three months, and in the case of transfer or termination of service, a period not

- exceeding two months ;
- (ii) in the case of retirement or resignation, a period not exceeding one month ;
- (iii) in the case of leave, for the period of leave ; and
- (iv) in the case where discharge or dismissal of a worker results in an industrial dispute, for so long as the same is not finally disposed of.

(2) If the employer makes an application to the Industrial Tribunal having jurisdiction over the area and if the Industrial Tribunal is satisfied that a worker or any member of his family refuses to vacate the house allotted to such workers, after the expiry of the period specified in sub-rule (1) , the Industrial Tribunal may, notwithstanding anything contained in any other law for the time being in force, by notice served,–

- (i) by post, or any form of electronic mode; or
- (ii) by affixing a copy of it on the outer door or some other conspicuous part of such house, or require such worker or a member of his family or any other person who may be in occupation of the whole or any part of the house to vacate in within one month of the date of service of such notice.

(3) In the event of the failure of the worker or a member of the family or any other person who is in occupation of the house to comply with the notice under sub-rule (2) the Industrial Tribunal may, by order, evict such worker, member of the family or other person and take possession of the house and may, for that purpose, use such force as may be necessary:

Provided that, before taking such possession, a copy of the order of eviction shall be served on the worker or a member of the family or other any other person in occupation of the said house.

**117. Drinking water.-** An adequate supply of wholesome drinking water shall be made available in every plantation at worksites or at a place or places to be approved by the Inspector-cum-Facilitator at all times, during working hours.

**118. Source of supply.-** The water provided for drinking shall be supplied:-

- (a) from the taps connected with a public water supply system, or
- (b) from any other source approved by the concerned Public Health Authorities.

**119. Storage of water.-** If drinking water is not supplied from taps connected with a public water supply system, it shall be kept in suitable vessels and renewed atleast daily. All practicable steps shall be taken to preserve the water and vessels from contamination and keep the vessels scrupulously clean.



**120. Cleanliness of well or reservoir.-** (1) Drinking water shall not be supplied from any open well or reservoir unless it is so constructed, situated protected and maintained as to be free from the possibility of pollution by chemical or bacterial and extraneous impurities.

(2) Where drinking water is supplied from such well or reservoir, the water in it shall be sterilized periodically, atleast once in a period of every three months and the date on which sterilizing is carried out shall be recorded:

Provided that, this requirement shall not apply to any such well or reservoir if the water therein is filtered and treated before it is supplied for consumption.

**121. Report on Fitness for Human Consumption.-**The Inspector-cum-Facilitator may, by an order in writing, direct the employer to obtain at such time or at such intervals, (i.e., once in six months) as he may direct, a report from any of the laboratory approved by the Government for this purpose, as to the fitness for human consumption of the water supplied to workers, and in every case to submit to the Inspector-cum-Facilitator a copy of such report as soon as it is received.

**122. Toilet facilities.-**

- (a) Toilet facilities shall be provided in every plantation on the scale of one toilet for every fifty hectares of the area under cultivation or part thereof in addition to the toilet provided to the houses of workers:

Provided that, there shall be atleast one toilet for all genders.

- (b) The toilet shall be conveniently situated and shall have exclusive access for all genders.

**123. Toilets to conform to public health requirements.-** The toilet should conform to public health requirements and toilets other than those connected with an efficient water-borne sewage system, shall comply with the requirements of the Public Health authorities.

- (i) **Privacy of Toilets:-** Every toilet shall be under cover and so partitioned off as to secure privacy and shall have a proper door and fastenings.
- (ii) **Sign Boards to be displayed:-** Where workers of both sexes are employed, there **shall** be displayed outside each toilet each toilet or toilet block, a notice in the language understood by the majority of workers “For men only” or “For Women only”, as the case may be. The notice shall also bear the figure of a man or of a woman as the case may be.

(iii) **Water taps in toilet:-**

- (a) Where piped water supply is available, a sufficient number of water taps, conveniently accessible, shall be provided in or near such toilet accommodation.
- (b) If piped water-supply is not available, sufficient quantity of water shall be kept stored in suitable receptacles near the toilet.

**124. Construction and maintenance of drains.-** All drains carrying waste of sullage water shall be constructed in masonry or other impermeable materials and shall be regularly flushed and the effluent disposed of by connecting such drains with a suitable drainage line:

Provided that, where there is no such drainage line, the effluent shall be deodorized and rendered innocuous and then disposed of in a suitable manner to the satisfaction of the Health Officer.

**125. Creches.-** (1) In every plantation wherein fifty or more workers (including workers employed by any contractor) are employed or were employed on any day of the preceding twelve months, the employer shall provide and maintain a crèche or creches for the use of their children who are below the age of six years according to the standards laid down in these rules.

(2) Every crèche shall be conveniently accessible to the mothers of the children accommodated therein.

(3) There shall be not less than 1.5 square metres of the floor area for each child to be accommodated in a crèche, but the floor area shall not be less than 12 square metres.

(4) The building in which the crèche is situated shall be of sound construction with a good plinth.

(5) The plan of the creche building shall be in accordance with the standard plan or plans laid down by the Chief Inspector-cum-Facilitator:

Provided that where no standard plan has been laid down or where it is proposed to deviate from a standard plan, the Chief Inspector-cum-Facilitator's approval shall be obtained.

(6) The creche shall be furnished with suitable furniture and a cradle for each child below the age of two and provided with playing materials such as sliding chutes, see-saws, dummy horses, toys etc.

(7) A Suitable fenced and shady open air playground shall be provided for the older children.

(8) The employer shall appoint,-

(i) a woman trained in the care of children and infants as creche-in-charge to look after children during the absence of their mothers; and

(ii) other staff.

**126. Wash room.-** (1) There shall be in or adjoining creche a suitable wash room for the washing of the children and their clothes.

(2) There shall be provided a toilet for the use of the children in the creche.

**127. Supply of milk and refreshment.-** Atleast 400 ml of clean pure milk if possible, otherwise, powdered milk approved by the Medical Officer shall be made available for each child on every day it is accommodated in the crèche and the mother of such child shall be allowed in the course of her daily work, two intervals of sufficient time to visit the crèche and feed the child. For children above two years of age, there shall be provided in addition an adequate supply of wholesome refreshment.

**128. Supply of clothes, soaps and oils.-** (1) The creche staff shall be provided with suitable clean clothes for use while on duty in the crèche.

(2) (a) Two sets of clothing once a year shall be made available for each child while it is in the crèche. The clothing for boys will consist of a shirt and a half-trouser and for girls a blouse and a skirt or a frock or gown. Measurement should be taken and the clothing must be stitched accordingly to suit every child in the crèche. The cost of the cloth and stitching thereof including washing charges for washing the clothes once in a week shall be borne by the employer.

(b) One cake of soap weighing 100 gms. and 100 ml. oil shall be made available for the use of each child per month while it is in the crèche.

Provided that:-

- (i) an establishment may avail common crèche facility of the Central, State Government, Municipality, Town Panchayath, Village Panchayath or private entity or provided by Non-Governmental Organisation or by any other organisation; or
- (ii) a group of establishments may agree to pool their resources for establishing a common crèche.

**129. Educational facilities for worker's children.-** Every employer shall, if the number of workers' children between the ages of 6 to 12, in his plantation exceeds 25, provide and maintain a primary school or schools for imparting primary education to the children:

Provided that, an employer may not provide and maintain a primary school if there is one under the direct management of the State Government or of any local body for imparting free education to the children up to the primary or higher standard, with enough seats to admit the children between the ages of six and twelve of the workers in his plantation and

within a distance of 02 kilometers from the place where workers reside in his plantation.

Provided further that, subject to the above provisions a group of employers may jointly provide and maintain a primary school and share its expenses.

**130. Construction Of School Building.-** (1) The school building shall be constructed in accordance with the standard plan or plans which may be laid down by the State Government.

Provided that, where there is no standard plan or where it is proposed to deviate from a standard plan, the State Government's approval of the plan of the school building shall be obtained

(2) Where adequate space is available, an open air playground with suitable accessories shall also be provided for the children attending the school

(3) The employer or employers, as the case may be, shall provide for every primary school maintained under rule 137 such educational and other equipment as may be considered necessary by the State Government.

**131. Appointment of teachers.-** (1) The employer or employers concerned shall appoint one teacher for every forty children attending the primary school.

(2) The teacher shall possess the qualifications prescribed by the State Government for teachers in Government primary schools.

Provided that, in the case of any person who is working as a school teacher in a plantation at the commencement of these rules the State Government may, subject to such conditions as it may specify, relax any of the qualifications.

(3) The curriculum, duration, standard and syllabus of the course of instruction to be imparted in the primary school shall be such as may be approved by the State Government.

(4) No fees shall be charged from the worker's children attending the primary school.

**132. Medical facilities.-** Every employer shall provide Health facilities to every worker employed in the plantation (including his family) or provide coverage under the Employees State Insurance Scheme of Social Security Code.

Provided that, health facilities not provided under Employees State Insurance Scheme of Social Security Code the health facilities prescribed under these rules shall be provided by the employer.

**133. Type of Hospitals.**– There shall be two types of hospitals in plantations namely, garden hospitals and group hospitals.

(i) Garden hospitals shall deal with out-patients, in-patience not requiring any elaborate diagnosis and treatment, infectious cases midwifery, simple pre-natal and postnatal care, care of infants and children and periodical inspection of workers.

(ii) Group hospitals shall be capable of dealing efficiently, with all types of cases normally encountered but shall not be used for routine treatment. Admission to group hospitals except in emergency shall be only on the recommendation of a garden hospital doctor.

**134. Garden hospitals.**– (1) Every employer of plantations specified in column(1) of the Table below shall provide the medical facilities specified in the corresponding entries in column (2) thereof.

**TABLE**

<b>Sl. No.</b>	<b>Class of plantations</b>	<b>Nature of medical facilities to be provided</b>
	(1)	(2)
1	Plantations which employ 1,000 or more workers	Own garden hospital.
2	Plantations employing more than 200 workers but less than 1,000 workers	Combined garden hospital and own dispensary
3	Plantations employing 200 or less workers.	Dispensary either individually or in groups with necessary equipment and arrangements for visiting doctors (The employers shall ensure that the doctor visits the dispensary atleast once a week)

(2) Each garden hospital shall be under a qualified Medical Practitioner assisted by atleast one trained nurse, one trained maternity assistant, a qualified pharmacist, one man and one woman Nursing Orderly, one scavenger and one sweeper. The services of the staff shall be readily available during all hours:

Provided that, in the case of doctors, nurses, maternity assistants and pharmacists employed in plantation at the commencement of these rules, the Chief Inspector-cum-Facilitators of plantations may in consultation with the Director of Medical Services grant exemption from possessing the qualifications prescribed for them.

(3) Medical and auxiliary personnel shall be appointed according to the following scale:-

(i) One additional qualified medical practitioner for every 1750

workers or part thereof.

- (ii) One additional qualified nurse for every 1750 workers or part thereof.
- (iii) One additional maternity assistants for every 1750 workers or part thereof.
- (iv) One additional pharmacist for every 1750 workers or part thereof.
- (v) One additional men nursing orderly for every 1750 workers or part thereof.
- (vi) One additional women nursing orderly for every 1750 workers or part thereof.
- (vii) One additional scavenger for every 1750 workers or part thereof.
- (viii) One additional sweeper for every 1750 workers or part thereof.

Provided that, where the number of workers does not exceed 2000, no additional practitioner need to be appointed.

Provided further that, where the number of women workers employed in any plantation is not less than 750, a woman medical practitioner also shall be appointed.

(4) (a) A minimum of 15 beds shall be provided in every garden hospital per 1,000 workers served and each bed shall be allowed atleast six square metres of floor space.

(b) Every hospital shall be of sound permanent construction with impermeable washable walls to a height of atleast 1.5 metres on the inside with proper water supply and efficient sanitary arrangements.

(c) Every hospital shall have pure piped water supply and the wards, consulting room, operation theatre and dispensary shall each have a water point over a suitable glazed sink.

(d) The following departments shall be provided:-

- (i) general ward for male
- (ii) general ward for female
- (iii) maternity with separate labour room,
- (iv) family planning centre
- (v) infectious ward with separate sanitary arrangements.
- (vi) out-patient department (with sufficient waiting space for patients to wait under cover) preferably situated in a separate block form general wards.
- (vii) consulting room so arranged that patients can be examined in privacy.
- (viii) minor operation in dressing room
- (ix) dispensary and drug store
- (x) general store
- (xi) kitchen for cooking

(e) In every hospital, transport facilities shall be provided for carrying patients to and from group hospitals.

**135. Group hospitals.**— (1) Group hospitals shall be established in the following manner:-

(2) Plans for the establishment of group hospitals containing details as regards their location and size, areas of plantations served, the number of workers employed thereon, etc., shall be approved by the State Government.

(3) Every group hospital shall have a minimum of 100 beds and there shall be atleast three beds per 700 workers, every bed having 7.5 square metres of floor space.

Provided that, the State Government may fix a lesser number of beds to be provided in a group hospital and exempt a group of plantation from providing a group hospital, if it is satisfied that adequate alternative arrangements exist for treatment of patients intended to be treated at a group hospital:

Provided further that, no exemption shall be allowed without the previous approval of the Central Government.

(4) The hospital shall be built according to such specifications as may be approved by the State Government.

(5) There shall be provision for piped supply of pure water, electricity, modern methods of sanitation and water flushed closets. Each ward, labour room, surgical dressing room, consulting room and dispensary, shall have a water point over a suitable glazed sink :

Provided that, with the approval of the State Government suitable alternative arrangements may be made in regard to supply of pure water, electricity and other modern methods of sanitation:

(6) Each hospital shall have provision for,-

- (a) Operating theatre block,
- (b) X-ray block,
- (c) Physical treatment block,
- (d) Dental treatment block,
- (e) Labour room,
- (f) T.B. and V.D. clinics,
- (g) Consulting and examination rooms
- (h) Clinical Laboratory fully equipped,
- (i) Dispensary,
- (j) Administrative and office block,
- (k) Kitchen and Laundry blocks,
- (l) Lavatories and bath-rooms,

- (m)Stores,
- (n)Mortuary and post-mortem room

(o)Out-patient block which should preferably be at some little distance from the wards.

(p)Separate wards shall be provided for male, female, maternity cases and small isolated wards for infectious diseases:

Provided that X-ray and physical Therapy blocks may not be provided if satisfactory arrangements are made by employers to provide these facilities with some hospital approved by the chief Inspector-cum-Facilitator.

(7) (a) Every group hospital shall have such medical and other staff as may be specified by the State Government. All doctors in a group hospital shall be qualified medical practitioners.

(b) There shall be 15 nurses for a 100 bedded hospital of whom one shall be senior trained, 5 junior trained and 9 assistant nurses. Such classification may be made according to their qualifications and experience.

(8) A properly equipped ambulance shall be maintained at every group hospital.

**136. Equipment and drugs.**— (1) Every dispensary/garden hospital and group hospital shall maintain such equipment and drugs, etc., as may be notified by the State Government.

(2) The District Medical Officer concerned or (an Assistant surgeon nominated by District Medical Officer or a Medical Officer appointed by the State Government) shall visit the dispensaries, garden hospitals and group hospitals atleast once a year to see whether they are sufficiently equipped and stocked with drugs, and send a report to the management and to the chief Inspector-cum-Facilitators of plantations.

**137. Medical records.**— The medical practitioner in charge of each dispensary, garden or group hospital shall,-

- (a) maintain such registers, books, accounts and a medical record in respect of every patient, and
- (b) comply with such regulations as may be made by the State Government in respect of medical stores.

**138. Standard of medical facilities.**—

(a) Out-patients, treatment

It shall include

- (i) detention for observation and treatment
- (ii) preventive treatment such as vaccination and inoculation,
- (iii) free provision of all drugs including those needed for



injections and dressings and appliances that may be considered necessary,

- (iv) ante-natal and post-natal advice,
- (v) provision of certificates, free of cost in respect of maternity and sickness benefit claims.

(b) In patients' Treatment,–

- (i) The hospital treatment shall include maintenance, food and medicines including treatment at confinement as may be available at the hospital and the said facilities shall subject to the provisions of clause(ii) be free of cost to workers and shall be paid for by the plantations.
- (ii) notwithstanding anything contained in clause(i), workers and their families admitted as in-patients in the hospital shall be entitled to the supply of free diet, only where any award, agreement of contract of service provides for the supply of free diet or where they were already enjoying the benefit of free diet under any custom usage and past practice and such supply shall be in accordance with the terms of the said award, agreement, contract, custom, usage and last practice, but where there is no such award, agreement, contract, custom, usage and past practice the diet charges shall be paid for by the workers at such rate as the State Government may, from time to time, fix.
- (iii) workers and members of their families undergoing treatment as in-patients in the Garden or Group hospitals in plantations shall be required during their period of stay in the hospitals to wear only the uniforms supplied by the Garden or Group hospitals free of cost.

**139. Failure to provide and maintain medical facilities as required in these rules.**– (1)If any employer does not provide and maintain medical facilities as required in these rules to the satisfaction of the Chief Inspector-cum-Facilitator, the latter will cause to be provided and maintained these facilities in the nearest garden hospital or dispensary or in a Primary Health Centre or other similar hospital or dispensary.

(2)The defaulting employer shall be liable to pay the cost such medical facilities including charges, if any, in respect of,–

- (a) a medical officer's visit to the plantations for the purpose of attendance on any sick worker or workers and his or their families respectively;
- (b) The maintenance of sick workers or a member of his family in a hospital/dispensary for each day's maintenance ; and
- (c) Transport to and fro provided to the sick worker or a member of his family.

**140. Recovery of sum due.**– When any sum of money is due from any employer under rule 147, the Chief Inspector-cum-Facilitator shall give him notice in writing requiring the payment of the amount due. If the amount is not deposited he shall issue recovery certificate to the Deputy Commissioner of the District, who may recover the same as arrears of land revenue.

**141. Recreational Facilities.**– (1) Every employer shall provide and maintain.

- (i) a recreation centre or centres for workers with provision for indoor games suitable for adult workers and children; and
- (ii) where adequate flat open space is available within a reasonable distance, a playground or playgrounds for adult workers and children with necessary sports equipment for outdoor games:

Provided that, subject to the above provisions, a group of employers may, with the approval of the Chief Inspector-cum-Facilitator, provide and maintain joint recreation centres and playgrounds and share the expenses.

(2) Every recreation centre to be provided and maintained shall be conveniently situated as near as possible to the worker's quarters.

(3) An employer of a plantation shall be responsible to provide and maintain welfare facilities for which the workers in the plantation are entitled under this Code either from his own resources or through the schemes of the Central Government or State Government, Municipality or Panchayat for the locality in which the plantation is situated.

**142. Restriction on employment of women and adolescent worker in handling insecticides, chemicals and toxic substances in plantation.**– Women worker or adolescent worker shall be permitted to be engaged in handling or storage or transport of insecticides, chemicals and toxic substances only by following the standard operating procedures as notified by the State Government.

**143. Appointment and qualification of Supervisors.**– The use, handling, storage and transportation of insecticides, chemicals and toxic substances shall be supervised by a competent person who should possess the following qualifications namely:-

- (i) He shall be a graduate in Agriculture or in science or he shall possess a Certificate Course on handling of chemicals and toxic substances conducted by the institute recognized by the Government of Karnataka.

- (ii) He shall be given training from a designated Training Institute and
- (iii) He shall also possess valid certificate from Red Cross Society/St. Johns Ambulance Association for giving first aid treatment to workers.

**144. Medical examination to the workers.-** (1) Every worker who is engaged in the work of handling, dealing, or spraying or mixing insecticides, chemical and toxic substances shall be medically examined initially at the time of employment and thereafter once in year in Group Hospital or Garden or any other hospitals notified in this regard.

(2) The medical examination and tests shall be conducted annually as per **Form XXXVII**.

(3) Any person showing symptoms of poisoning shall be immediately examined and given proper treatment.

(4) Every employer shall maintain health record of every worker such as annual medical examination or any other examination in **Form XVII** which shall be kept in the plantation and every such worker shall have access to such record.

**145. Washing, bathing, cloak room, protective clothing and equipment facilities.-** (1) Every employer shall provide washing bathing and cloak room facilities to the workmen, who are employed in handling insecticides, chemicals and toxic substances.

(2) Protective clothing and equipment :-

- (a) persons handling insecticides, chemicals and toxic substances during its operation, distribution, mixing, spraying shall be adequately protected with appropriate clothing.
- (b) The protective clothing shall be made of materials which prevent or resist the penetration of any form of insecticide, chemical and toxic formulations. The materials shall also be washable so that the toxic elements may be removed after each use.
- (c) A complete suit of protective clothing shall consists of the following dresses, namely:-
  - (i) Protective outer garment with hat  
Rubber gloves or such other protective gloves
  - (ii) extending of way upto the fore arm made of materials impermeable to liquids.
  - (iii) Dust proof goggles
  - (iv) Boots
  - (v) Reusable cloth masks

**146. Precautionary notices:-** Every employer in the plantations shall display the following precautionary notices at or near the place where the insecticides chemicals and toxic substances are handled:-

- (i) Use protective clothing's like overalls, gloves, goggles, rubber gum-boots and wide-rimmed hats.
- (ii) Do not wear clothes contaminated with insecticides and pesticides
- (iii) Clean the protective clothing by washing with soap and water
- (iv) Do not allow children, sick persons and pregnant women and nursing mothers to handle insecticides and pesticides
- (v) Do not eat, drink, smoke or chew while handling insecticides and pesticides
- (vi) Never blow out clogged nozzles with mouth
- (vii) Do not use leaking sprayers. Avoid contamination of the skin, mouth and eyes
- (viii) Do not inhale the insecticides unattended in the fields
- (ix) Never spray insecticides and pesticides against the wind.
- (x) Do not leave insecticides and pesticides unattended in the fields
- (xi) Do not allow humans and livestock to enter the insecticides and pesticides sprayed fields for a period of time, suggested by the manufacturers.
- (xii) Do not wash insecticides and pesticides containers near a well or running stream
- (xiii) Keep clean water, soaps and towels ready for use
- (xiv) Wash hands and exposed skin thoroughly with soap and water before eating, drinking, smoking or, chewing and after work.
- (xv) Keep the insecticides and pesticides locked in store room and out of reach of children and other unauthorized persons
- (xvi) Do not enter sprayed field. Follow the re-entry periods for all insecticides and pesticides including herbicides, suggested by the manufactures
- (xvii) Keep insecticides and pesticides in their original, labelled containers.
- (xviii) Do not decant insecticides and pesticides into unlabelled containers except for immediate use.
- (xix) Dispose the containers safely after thoroughly emptying and washing. They may be buried in a place away from water source.
- (xx) Never reuse the container for any other purposes if it is impossible to remove the traces and pesticides from the containers.

**147. Transport and storage of insecticides within the plantation.-**

(1) No insecticides, chemicals and toxic substances shall be transported or stored in such a way as to come into direct contact with food stuffs or animal feeds or drinking water.

(2) If any insecticides, chemicals and toxic substances are found to be leaked out in transport or storage, it shall be the responsibility of the employer to take such measures urgently to prevent poisoning and pollution of soil or water, if any.

(3) The packages containing insecticides, chemicals and toxic substances shall be stored in separate rooms or premises away from the rooms or premises used for storing such articles or shall be kept in separate almshouses under lock and key depending upon the quantity and nature of the insecticides.

(4) The rooms or premises meant for storing insecticides, chemical and toxic substances shall be well built, dry, well lit and ventilated with sufficient dimension.

**148. List of insecticides, chemicals and toxic substances.-** Every employer shall display in plantations the list of insecticides, chemicals and toxic substances as notified by the State Government, from time to time under the Insecticides Act, 1968 (Central Act 46 of 1968).

## **CHAPTER X**

### **Offences and Penalties**

**149. Power to impose penalty in certain cases.-** (1) The State Government may by notification appoint such officers for holding enquiry for the purpose of imposing penalty in the following manner, namely:-

- (a) The Inspector-cum-facilitator at the time of inspection finds any violations in respect of the provisions of the code and rules made there under shall facilitate to comply the provisions of the code and rules. If employer fails to comply even after facilitation, the Inspector-cum-facilitator shall issue notice to employer seeking compliance within fifteen days in writing, The Inspector-cum-facilitator shall file complaint in **Form XXXVIII** before the authority notified under sub rule (1).
- (b) Upon receiving details of violations of provisions from Inspector cum facilitator of concerned jurisdiction, the officer holding enquiry shall summon for attendance of the employer/Manager and the Inspector-cum-facilitator for giving evidence and producing relevant documents for the enquiry.

(c) After hearing the officer shall note the proceedings and within thirty days shall pass an order of penalty or discharge of the employer/Manager stating the reasons in the order. Copy of order shall be delivered to both the parties electronically or otherwise.

(d) Any penalty directed to be paid under section 111 maybe recovered by any judicial magistrate to whom the enquiry officer makes application and judicial magistrate shall recover the penalty amount as if it were fine imposed by such magistrate.

(2) Any person aggrieved by an order made by the officer may prefer an appeal in **Form XXXIX** before such officers as notified by the State Government. The appeal shall be made within 60 days of receipt of the copy of the order.

(3) The appellate authority shall not admit the appeal, unless the appellant remits a fee of Rs.2000 electronically or otherwise.

**150. Composition of certain offences:- Manner of compounding of offences by the authorized officer specified:-** (1) The Employer who is willing for compounding of offences under this code may apply in **Form XL** to the compounding officer.

(2) The officer notified by the state government for the purposes of compounding of offences under sub-section (1) of section 114 shall issue electronically or otherwise, a compounding notice for the offences which are compoundable under section sub-section (1) of section 114.

(3) The person so noticed may deposit the entire compounding amount by electronic transfer or otherwise, within fifteen days of the receipt of the notice.

(4) The Compounding Officer shall issue a compounding certificate in **Form XLI** within ten days of receipt of the compounding amount, to such person from whom such amount has been received in satisfaction of the compounding notice.

(5) If a person so noticed fails to deposit the compounding amount within one month, prosecution shall be instituted before the competent Court of law.

(6) No prosecution shall be instituted without giving an opportunity to the employer to comply with such provisions subjected to proviso of sub-section (1) of Section 110 and compounding as under Section 114.

**151. Common license for contractor, factories and to industrial premises, etc under section 119.-** (1) Notwithstanding anything contained in these rules, any person desirous of obtaining common license for an

Establishment in respect of an industrial premises for beedi and cigar work and/or for engaging contract workers under the code shall make an online application to the authority of Department of Labour notified by the State Government.

(2) Notwithstanding anything contained in these rules, any person desirous of obtaining common license for a factory and or engaging contract workers under the code shall make an online application to the authority of Department of Factories, Boilers, Industrial Safety and Health notified by the State Government.

(3) The online application for common license under sub rule (1) & (2), shall be filed in **Form XLII** and shall pay the fees online as specified in the **table under rule 61** for contractor, table specified under rule 89 for factories and table specified under **rule 83** for industrial premises for beedi and cigar work under these rules for an establishment.

(4) On receipt of an application under sub rule (1) & (2), the authority so notified refer to in sub rule (1) & (2) shall make such inquiry, as necessary.

(5) Where the authority referred to in sub rule (1) & (2) are satisfied that the common license may be issued in respect of a industrial premises for beedi and cigar work, factories and for engaging contract workers and such combination thereof under the code, or any combination of thereto or single licence, such authority shall issue a license within 45 days of the receipt of application, of such license in **Form XLII** shall be valid for five years.

## **CHAPTER XI**

### **Appeals**

**152. Appeals.-** (1) An Appeal under sub section (6) of section 119 of the code shall lie to the appellate authority who shall be the higher officer of the licensing authority under section 119 of sub-section (1) of the code as notified by the State Government.

(2) An Appeal shall be made in **Form-XLIII** along with a deposit of twenty percent of penalty imposed under sub-section (2) of section 111 of the code.

## **CHAPTER XII**

### **Social Security Fund**

**153. Social Security fund.-** The fine, penalty and any other amount collected or recovered under this code and rules made there under shall be transferred to unorganized workers social security board constituted under the unorganized workers social security Act, 2008 (Central Act No. 33 of 2008).

## **CHAPTER XIII**

### **Miscellaneous**

#### **154. Manner of survey on situation relating safety and health.-**

(1)The Chief Inspector Cum Facilitator, an officer or the committee so appointed by the State Government to undertake survey in accordance with provisions of section 121(2) of the code, may, at any time during the normal working hours of an establishment, or at any other time as it is found by him or the committee to be necessary, after giving notice in writing to the employer or manager of the establishment or any other person who for the time being in charge of the establishment, to undertake survey relating to safety and health in the establishment and outside.

(2)Employer or manager or other person shall afford all facilities for such survey, including facilities for the examination and testing of plant and machinery and collection of samples and other data relevant to the survey.

(3) For the purpose of facilitating surveys every worker and person in near vicinity, if so required by the person conducting the survey, present himself to undergo such medical examination as may be considered necessary by such person and furnish all information in his possession and relevant to the survey.

(4) Any time spent by a worker for undergoing medical examination or furnishing information under sub rule (3) shall, for the purpose of calculating wages and extra wages for overtime work, be deemed to be time during which such worker worked in the establishment.

By Order and in the name of the  
Governor of Karnataka,

**(Praveena Kumara Hanni)**  
Desk Officer-3  
Labour Department.

X

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Anuradha h r  
Deputy Secretary



**FORM I-A**  
**(See rules 4 (1))**

**Application for Registration / Renewal / Amendment**  
**of Plantation / Motor Transport Undertaking / Building and Other Construction Work**  
**/ Audio Visual Production Establishments / Newspaper establishment**

**1. Establishment Details:**

1. Retrieve details of Establishment through LIN:
2. Name of Establishment:
3. Name and residential addresses of the
  - i) Proprietor and partners of the plantation in case of a firm not registered under the Partnership Act, 1932, or
  - ii) Chief Executive in case of public sector undertaking
  - iii) Name and residential address of the Managing Director/ Directors in the case of a company registered under the Companies Act, 1956
4. Full name and address of the Manager/person responsible for the supervision and control of the establishment :
5. Nature of work of the Establishment :
6. Location and Address of the Establishment:
7. Email Address, Telephone & Mobile No:
8. Activity as per National Industrial Classification:
9. Details of Selected NIC Code:
10. Others details of Establishment:
  - a. Total Number of employees engaged directly in the establishment:
  - b. Total Number of the contract employees engaged:
  - c. Total Number of Inter-State Migrant workers employed:
  - d. Total number of Fixed Term Employees :
  - e. Total number of any other category of workers :
11. Number of Shifts :
12. Fees remitted :

**2 (a) For Plantation:**

1.	Nature of plantation, e.g., tea, coffee, rubber or cinchona	
2.	Area of Plantation	
3.	Maximum number of plantation workers employed on any day of the preceding 12 months (figures for men and women employees to be given separately)	<div style="display: flex; justify-content: space-between;"> <span>Men</span> <span>Women</span> </div> <div style="display: flex;"> <div style="flex: 1;">           Total 1) Direct 2) Contract         </div> <div style="flex: 1;"></div> </div>

**2 (b) for Motor Transport undertaking:**

1.	Nature of Motor Transport Service, e.g., City Service, long distance passenger service, long distance freight service.	
2.	Total number of routes	
3.	Total route mileage	
4.	Total number of Motor Transport Vehicles on the last day of the preceding year.	

**2 (c) For building and other construction work:**

1.	Type of Construction work	
2.	Probable period of commencement of work	
3.	Expected period for completion of work	
4.	Details of approval of the local authority	

**2(d) for Audio Visual Production Establishments:**

1.	Number of technicians employed or proposed to be employed :	
2.	Number of Artists employed or proposed to be employed :	
3.	Total number of other employees / workers employed or proposed to be employed :	

**2(e) Newspaper Establishments:**

1.	Number of Editorial Employees (including Editors, Sub-Editors, Reporters, Correspondents) employed or proposed to be employed:	
2.	Number of Printing and Technical Employees (including compositors, machine operators, technicians) employed or proposed to be employed:	
3.	Total number of other employees / workers (including administrative, clerical, circulation, advertising, sales and support staff) employed or proposed to be employed:	

**3. Identification of the establishment e-sign/ digital sign of employer/representative:**

Date:-

Place:-

**Signature/ E-sign/digital sign of  
employer**

**FORM-I B**

**(See rules 4 (2) 89 (1) 90 (2) (b), 90A (2) (a) and 91 (1))**

**Application for Registration for existing Factory/New  
Factory/Amendment to certificate of Registration**

**A. Establishment Details.**

1. Retrieve details of Establishment through LIN:
2. Name of Establishment:
3. Location and Address of the Establishment:
4. Others details of Establishment:
  - a. Total Number of employees engaged directly in the establishment:
  - b. Total Number of the contract employees engaged:
  - c. Total Number of Inter-State Migrant workers employed:

**5 (a) For factories:**

Details of the manufacturing process	Full postal address and situation of the factory along with plan approval details	Name and address of the occupier and manager	Maximum number of workers to be employed on any day	Total HP/KW of the machineries installed in the factory
1	2	3	4	5

**A. Details of Employer:-**

1. Name & Address of Employer / Occupier / Owner/Agent/ Chief Executive/ port authority etc:
2. Designation:
3. Father's/ Husband's Name of the Employer:
4. Email Address, Telephone& Mobile No:

**B. Details of the Manager/ Agent:-**

1. Full name & Address of Manager/ Agent or person responsible for supervision and control of the Establishment
2. Address of Manager/Agent:
3. Email Address, Telephone& Mobile No :

**C. Others Details:-**

Dated:- Place:-

Signature/ E-sign/digital sign of employer

**FORM-II**  
**(See rule 4 (4) (i))**

**Form of Certificate of Registration**

Registration No:

Date:

A Certificate of registration containing the following particulars is hereby granted under sub section (2) of section 3 of the Occupational Safety, Health and Working Conditions Code, 2020 (....of 2020) to(Name of the establishment)

1. Nature of work carried on in the establishment (Please tick mark)
  - (a) Establishment (b)Factory (c) Dock work
  - (c) any other work (not covered above)
2. Details of the establishment:
  - i. Total Number of employees engaged directly in the establishment:
  - ii. Total Number of the employees engaged through contractor.....
  - iii. Total Number of Contractors and their details:
  - iv. Number of inter-state migrant workers engaged:

**3. (a) For Establishment**

Details of the Activity Carried on	Full postal address and situation of the festablishment	Name and address of the employer	Maximum number of employees to be employed on any day	Remarks
1	2	3	4	5

**3 (b) For factories**

Details of the manufacturing process carried on	Full postal address and situation of the factory along with plan approval details	Name and address of the occupier	Maximum number of workers to be employed on any day	Total HP/KW of the machineries installed in the factory
1	2	3	4	5

4. Amount of registration fee paid.....
5. Remarks of registering officers;

Signature E -Sign/DSC of  
Registering Officer along with  
designation

**Conditions of Registration**

- (1). Every certificate of registration issued under rule 3 shall be subject to the following conditions, namely:
  - (a). the certificate of registration shall be non-transferable;

- (b) the number of workers employed in an establishment directly and contract employees shall not, on any day, exceed the maximum number specified in the certificate of registration; and
- (c) Save as provided in these rules, the fees paid for the grant of registration certificate shall be non- refundable.
- (2) The employer shall intimate the change, if any, in the number of workers or the conditions of work to the registering officer within 30days
- (3) The employer shall, within thirty days of the commencement and completion of any work, intimate to the Inspector Cum Facilitator, having jurisdiction in the area where the proposed establishment or as the case may be work is to be executed, intimating the actual date of the commencement or, as the case may be, completion of establishment such work in **Form VIII** annexed to these rules electronically.

A copy of the certificate of registration shall be displayed at the conspicuous places at the premises where the work is being carried.

**FORM-III**  
(See rule – 4 (4) (iii))

**REGISTER OF ESTABLISHMENTS**

SI. No.	Establishment	Registration No. and Date	Name and Address, location of the establishment registered	Total number of direct employees employed	Name and Address of the contractor	Maximum number of contract Workers employed	Maximum number of interstate migrant Workers employed	Remarks
1	2	3	4	5	6	7	8	9
	Factory / establishment employing contract labours  Plantation Motor Transport Undertaking Beedi & Cigar establishments  Building and Other Construction Work  Audio Visual Production Establishments							

**FORM-IV**

**(See rule-4 (9))**

**Notice of Commencement / Cessation of Work**

1. Registration No:
2. Name and Address of Establishment:-
3. Name & Designation of employer/ Port authority (who has ultimate control over the affairs of the establishment):-
4. Full address to which communication relating to the establishment to be sent:-
5. Nature of work of the establishment:-
6. In case of the notice is for commencement of work the approximate duration of work:-
7. in case of cessation, the date of cessation:

I/We hereby intimate that the work of establishment having registration No.  
.....dated .....is likely to  
commence/cessation is likely to be completed with effect from  
.....(Date)/ On.....(Date)

**In case of cessation of work:**

I/we hereby certify that the payment of all dues to the workers employed in the establishment have been made and the premises are kept free from storage of hazardous chemicals and substances.

Signature of the Employer

To,

The Inspector Cum Facilitator

**FORM-V****(See rule-5)**

**The medical examination shall be conducted by a qualified medical practitioner as per following proforma:**

**A. Demographics:**

Question	Answer	Remarks
Date:		
Name of the Worker:		
Age:		
Permanent Address:		
Gender:		
Total Number of family Members:		
Total monthly family Income:		
Is the employee under ESI (Employees' State Insurance) Scheme? If yes, provide IP Number.	Yes/No	
Is the employee under any other health scheme apart from ESI-Scheme? (If yes, provide the name of the scheme)	Yes / No	

**B. Occupational History**

Question	Answer	Remarks
Present Designation:		
Work Profile:		
Duration of service in the present work profile:		
Working Hours per shift:		
Night Shift Per Week:		
Night Shift per Month:		

**C. Brief Review of Medical History: Diagnosed previously or currently under treatment or Currently suffering from**

Question	Answer (Yes/No)	Remarks
Anaemia		
Jaundice		
Asthma		
COPD		
History of Any other Lung Disease: (If Yes, Please Specify)		
Vertigo/Dizziness		
Diabetes Mellitus		
Hypertension		
Any Cancer (If Yes, Please Specify the Cancer)		



Chronic Low Back Pain		
Chronic Pain in hand or Elbow		
Hernia		

Hydrocele		
Varicose Vein		
Haemorrhoids		
History of amputation/fracture/dislocation injury during work (If Yes, please specify)		
Dermatitis (If Yes, specify Site)		
Hearing Impairment		
Visual Impairment		
Any Major Illness requiring hospitalization in last 1 year (If Yes, Name of the Disease)		
Occupational Injury in Last 1 year: if yes Specify the Location of injury and frequency		

## **2. Current Symptoms-DiseasesModule**

Question	Answer (Yes/No)	Remarks
Smoking habit		
Chewing Tobacco or Pan Masala or Gutkha:		
Alcohol Addiction		
Dermatosis (Irritant Contact Dermatitis/Eczema/Chloracne/Allergic Contact Dermatitis):		
Mucosal Irritation of eyes/Nose/Throat with response to chemical agent or biological agent:		
Symptoms like Respiratory Difficulty/ Chest Tightness/ Dry Cough at beginning of shift:		
Currently suffering from TB:		
Jaundice or Hepatitis:		
Currently suffering from Low Back Pain		
Currently suffering from Pain in hand or Elbow:		
Currently suffering from Visual Problems		
Currently suffering from Hearing Problems		
Any current injury (amputation/ fracture/ dislocation)		
Any current musculoskeletal sprains/ strains		

## **3. PhysicalExamination**

**Date of Examination:**

Question	Answer (Yes/No) or as appropriate	Remarks
----------	-----------------------------------	---------

General Skin Condition: (If Any Dermatitis, please mention its location)		
Weight (in Kg):		
Height (in Meter)		
Temperature (°F):		
BP:		

Pulse:		
SpO2:		
Respiratory Rate:		
Examination of Breast of female-employee		

## **F. Investigation Report**

- **Routine Blood Investigation: Attach the photocopy of the report**
- **Blood Grouping & Rh Typing and HB Electrophoresis Once in a lifetime**

<b>Parameter</b>	<b>Answer (Normal/Increase/Decrease)</b>	<b>Value</b>
Hb%:		
Total WBC Count and Differential Count:		
Platelet Count:		
ESR:		
FBS:		
PPBS:		
HBA1C level		
BUN:		
Creatinine:		
Total Protein		
Albumin		
Globulin		
SGOT		
SGPT		
Bilirubin		
Urine RE		
Urine ME		
Prostate Specific Antigen (PSA)		

## **G. Standard Chest X Ray (PA) View: attach the photocopy of the report Date:**

<b>Parameter</b>	<b>Answer (Normal/Abnormal)</b>	<b>Value ( if any importance)</b>
Report		

Report:

**H. Spirometry: attach the photocopy of the report (For mine employee) Date:**

Parameter	Answer (Normal/Increase/Decrease)	Value
<b>PEFR:</b>		
FEV <sub>1</sub> :		
Observed:		
Predicted:		
FVC:		
Observed:		
Predicted:		
FEV <sub>1</sub> /FVC:		
Final Report: Normal / Obstructive Lung Disease/ Restrictive Lung Disease/ Mixed Lung Diseases		

**I. Audiometry (Pure Tone / BERA): attach the photocopy of the report (For Mine Employee) Date:**

Parameter	Value/Result/Interpretation
Visual inspection of Eye for any abnormality like wax in external ear, infection etc	
Right Ear Hearing Threshold:	
Left Ear Hearing Threshold:	
Final Report preferable based on BERA:	
Right Ear:	
Left Ear:	

**J. Eye Examination: attach the photocopy of the report Date:**

Parameter	Value/Result/Interpretation
Visual inspection of Eye for any abnormality like corneal opacity/scarring, cataract etc.	
Visual Acuity: Right	
Visual Acuity: Left	
Colour Vision	
Field of Vision	
Binocularity	
Lateral Phoria	
Vertical Phoria	
Stereoscopic Vision and Depth Perception Testing	
Fundus (Retina) examination	

**K. 12 lead ECG and Echocardiography:**

Final Report:

**L. MEDICAL FITNESS TESTS FOR PERSONS WORKING AT HEIGHT (*as may be applicable*):**

1. Detailed Medical History and in-Depth General Medical Examination including tests for Vision, Hearing, Musculoskeletal System, Respiratory System, Cardiovascular System etc.

As applicable to all employees

2. Special Examination

a) Cardiovascular

Uncontrolled hypertension or ischemic heart disease will be a contraindication. In the presence of hypertension and abnormal ECG findings, the employee should be referred to a Cardiologist for fitness.

b) Tests for Labyrinthine functions and for sense of position Eye Examination for Bilateral Nystagmus, Rombergsign. The presence of bilateral nystagmus and a positive Romberg sign will be an absolutecontra-indication.

c) Neurological examination Evaluate seizure disorders: CT Scan of Brain and E.E.G ifindicated

d) Assessment of Diabetic ControlStatus:

(in case of employees suffering from Diabetes Mellitus)

e) Assessment of Phobia (Acrophobia) and any other Mental Health Disorder like Anxiety orDepression

d) Evaluation for Vertigo and Dizziness

**For use of Industrial Safety Section:**

Walking freely over a horizontal bar  
at 1 ft. height: PASS / FAIL Wearing  
a safety belt and tying the rope  
knot: PASS/ FAIL

Walking over a horizontal structure at 9 ft. height  
wearing a belt: PASS/ FAIL General physique  
(O.K./NOT O.K): PASS/ FAIL

**M. Any other information/examination/biological investigation/test as mutually agreed by the employer and qualified medical practitioner.**

**FORM-VI**

**(See rule-6 (1))**

**Appointment Letter**

- i.** Name of employee:
- ii.** Father's name:
- iii.** Aadhaar number:
- iv.** Date of Birth
- v.** Gender
- vi.** Labour Identification Number (LIN) of the establishment:
- vii.** (Universal Account Number (UAN)/Insurance Number (ESIC):
- viii.** Designation:
- ix.** Category of skill:
- x.** Date of joining:
- xi.** Wages, Basic Pay & Dearness Allowance:
- xii.** Other allowance including accommodation whichever is/are applicable:
- xiii.** Avenue for achieving higher wages/higher position:
- xiv.** Applicability of social security EPFO and ESIC benefits applicable:
- xv.** Registration number issued by the KBOCWBB:
- xvi.** Health check-up:
- xvii.** Broad Nature of duties to be performed:
- xviii.** Any other information:

Signature

Employer/Occupier/manager

**FORM-VII**  
**(See rule-6 (2))**  
**EXPERIENCE CERTIFICATE**

<u>To whom so ever concerned</u>
1. Name of employer/ contractor *:
2. LIN/PAN No. of the employer/ contractor *:
3. Email Id of the employer/ contractor *:
4. Mobile No. of the employer/ contractor *:
5. Nature and location of work:
6. Name of Principal Employer (incase of contract workers)*:
7. LIN/PAN No. of the Employer:*
8. Email Id of the Employer :*
9. Mobile No. of the Principal Employer:*
10. Name of the worker*:
11. UAN / AadhaarNo.:
12. Mobile No. :
13. Serial Number in the Employee Register:
14. Registration number, date and name of the Board if the building and other construction worker is registered as a beneficiary:
15. Period of Employment:
16. Designation:
Seal and Signature of Employer/Contractor
*Please strike off whichever is not applicable.

**FORM-VIII**

**(See rule-7 (1) (2) & (3))**

**NOTICE OF ACCIDENT OR DANGEROUS  
OCCURRENCE**

E.S.I.C. Employer's Code number: E.S.I.C.

Insurance Number of the injured person:

1. Name of employer :
2. Address of works /  
premises where the  
accident or dangerous  
Occurrence took place :
3. Nature of  
industry and  
LIN of the  
establishment:
4. Branch or department and  
exact place where the accident or  
dangerous occurrence took place :
5. Name and address of the injured person :
6. (a) Sex :  
(b) Age (at the last birthday) :  
(c) Occupation of the injured person :
7. Local E.S.I.C. Office to which the  
injured person is attached :
8. Date, shift and hour of accident  
Or dangerous occurrence :
9. (a) Hour at which the  
injured person started  
work on the day of  
accident or dangerous occurrence :  
(b) whether wages in full  
or part are payable to him  
for the day of the  
accident or dangerous occurrence :
10. (a) Cause or nature of accident  
or dangerous occurrence :  
(b) If caused by machinery-  
(i) Give the name of  
machine and the part  
causing the accident  
or dangerous occurrence :  
(ii) state whether it was moved  
by mechanical power at  
the time of accident  
or dangerous occurrence :  
(c) State exactly what the  
injured person was  
doing at the time  
of accident  
or dangerous occurrence :  
(d) In your opinion, was  
the injured person at  
the time of accident or

dangerous occurrence-

- (i) acting in contravention of provisions of any law applicable to him; or
- (ii) acting in contravention of any orders given by or on behalf of his employer; or
- (iii) acting without instructions from his employer?

(e) In case reply to (d) (i), (ii) or (iii) is in the affirmative, state whether the act was done for the purpose of and in connection with the employer's trade or business. :

11. In case the accident or dangerous occurrence took place while travelling in the employer's transport, state whether -

(a) the injured person was travelling as a passenger to or from his place of work; :

(b) the injured person was travelling with the express or implied permission of his employer; :

(c) the transport is being operated by or on behalf of the employer or some other person by whom it is provided in pursuance of arrangements made with the employer; and :

(d) the vehicle is being/not being operated in the ordinary course of public transport service ;

12. In case the accident or dangerous occurrence took place while meeting emergency, state- (a) its nature ; and

(b) whether the injured person at the time of accident or dangerous occurrence was employed for the purpose of his employer's trade or business in or about the



premises at which the  
accident or dangerous  
Occurrence took place. :

13. Describe briefly  
how the accident or  
dangerous occurrence  
took place :

14. Names and addresses of  
witnesses: (1)

(2)

15. (a) Nature and extent  
of injury (e.g. fatal,  
loss of finger, fracture  
of leg, scald, scratch  
followed by sepsis, etc.) :

(b) Location of  
injury (e.g. right  
leg, left hand,  
left eye, etc.)

16. (a) If the accident  
or dangerous  
occurrence was not  
fatal, state whether  
the injured person  
was  
disabled for more than 48 hours :

(b) date and hour of return of work :

17. (a) Physician,  
dispensary or hospital  
from whom or which the  
injured person  
received or is receiving treatment :

(b) Name of dispensary/panel doctor  
elected by the injured person :

18. (a) Has the injured  
person died? :  
(b) If so, date of death :

I certify that to the best of my knowledge and belief the above particulars are  
correct in every respect.

Date of dispatch of report :

Place:

Signature and Name and Designation  
of owner/ employer / manager/ agent

**FORM-IX**

**(See Rule 9 & 10)**

**Application by employee to Employer**

To,

The Employer/ Safety Officer .....

(Name of establishment) .....

(Address of establishment)

Subject: intimation of

unsafe/unhealthy

situationSir

[Detail of unsafe/unhealthy situation and proposed suggestions]

Name of Employee Designation

**FORM-X**  
**(See Rule 10)**

**Action taken report in regard unsafe/unhealthy situation**

It is brought to your knowledge that an unsafe/unhealthy situation [details] was brought into notice by [Name and designation of employee]. The remedial action report is submitted as below;

[ Details of remedial action]

Employer

**FORM-XI**  
(See rule-34)

**NOTICE OF PERIODS OF WORK**

Name of the Establishment.....Place.....District.....  
...

Periods of work Groups, Relations	Men												Women												Description of Groups, Nature of work	Remarks
	Total no. of men employed												Total no. of women employed													
	A			B			C			D			E			F			G			H				
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		

On working days From..

To ..

From ..

To ..

From ..

To ..

On partial Working days From..

To ..

From ..

To ..

Date on which this notice is first exhibited:      Signature of manager or agent :

Date :

**FORM-XII****(See rule-35)****REGISTER OF WORKERS EMPLOYED IN AN ESTABLISHMENT, WAGES,  
OVERTIME, FINE, DEDUCTION FOR DAMAGE OR LOSS**Name of the Establishment:  
Employer:

Name of the

Name of the Owner:  
Employer:

PAN/TAN of the

Labour Identification Number (LIN):

Sr. no. in Emplo yee Registe r	Name of the employ ee	Designat ion / Departm ent	Duration of Payment of Wages (Monthly/Fortn ightly /Weekly/Daily /Piece rated)	Wag e Peri od Fro m- To	Total no. of days work ed duri ng the perio d	Total overtime (hours wor ked or productio n in case of piece workers)	Rates of wages		
							Bas ic	DA	Allowanc es
1	2	3	4	5	6	7	8	9	10

Overti me earni ng	Nature of acts and omissions for which fine imposed with date	Amount of fine impose d	Damage or loss caused to the employer by neglect or default of the employee	Amount of deductio n from wages	Total amoun t of wages paid	Date of Payme nt	Attendance	
							Dat e	Signat ure
1 1	1 2	13	14	1 5	1 6	1 7	18	19

**FORM-XII****(See rule-37)****ANNUAL RETURN FORM**

Single Integrated Return to be filed On-line under the Occupational Safety, Health and Working Conditions Code, 2020, the Code on Industrial Relations, 2020, the Code on Social Security , 2020, and the Code on Wages,2019
<b><u>Instructions to fill up the Annual Return</u></b>
(1) This return is to be filled-up and furnished on or before 28 <sup>th</sup> or 29 <sup>th</sup> February every year.
(2) The return has two parts i.e. Part-I to be filled up by all establishments.

**FOR THE YEAR ENDING.....**

<b>Applicable to All Establishments - Part-I</b>									
<b>A. General Information:</b>									
<b>Sl. No.</b>			<b>Instructions for filling the column</b>						
1.	Labour Identification Number		EPFO, ESIC, MCA, MoLE (LIN)						
2.	Period of the Return	From	-To-	Period should be calendar year					
3.	Name of the Establishment								
4.	Email ID								
5.	Telephone No.								
6.	Mobile number								
7.	Premise name								
8.	Sub-locality								
9.	District								
10.	State								
11.	Pin code								
12.	Geo Co-ordinates								
<b>B(a).</b>	<b>Hours of Work in a day</b>								
<b>B(b).</b>	<b>Number of Shifts</b>								
<b>C. Details of Manpower Deployed</b>									
<b>Details</b>	<b>Directly employed</b>				<b>Employed through Contractor</b>				<b>Grand Total</b>
<b>Skill Category</b>	<b>Highly Skill ed</b>	<b>Skill ed</b>	<b>Sem i-Skill ed</b>	<b>Un-Skill ed</b>	<b>High ly Skill ed</b>	<b>Skille d</b>	<b>Sem i-Skill ed</b>	<b>Un-Skill ed</b>	
(i) Maximum No. of employees employed in the establishment in any day during the year	Male	Femal e	Transgen der	Total	Male	Femal e	Transgen der	Total	

(ii) Average No. of employees employed in the establishment during the year	Male	Female	Transgender	Total	Male	Female	Transgender	Total	
(iii) Migrant Worker out of (ii) above	Male	Female	Transgender	Total	Male	Female	Transgender	Total	
(iv) Number of fixed term employee engaged	Male	Female	Transgender	Total	Male	Female	Transgender	Total	
<b>D. Details of contractors engaged in the Establishment:</b>									
Sl. No.	Name with LIN of the Contractor			No. of Contract Labour Engaged					
<b>E. Details of various Health and Welfare Amenities provided.</b>									
Sl. No.	Nature of various welfare amenities provided			Statutory (specify the statute)	Instructions for filling				
1.	Whether facility of Canteen provided (as per section 24(v) of OSH Code, 2020)			Tick yes or no in the box	Applicable to all establishments where in hundred or more worker including contract labour were ordinarily employed				
2.	Crèches (as per section 67 of Code on Social Security Code, 2020 and Section 24 of the OSH Code 2020)			Tick yes or no in the box	Applicable to all establishments where fifty or more workers are employed				
3.	Ambulance Room (as per section 24(2)(i) of OSH Code, 2020)			Tick yes or no in the box	Applicable to mine, building and other construction work wherein more than five hundred workers are ordinarily employed				
4.	Safety Committee (as per Section 22(1) of OSH Code, 2020.			Tick yes or no in the box	Applicable to establishments and factories employing 500 workers or more, factory carrying on hazardous process and BoCW employing 250 workers or more, and mines employing 100 or more workers.				
5.	Safety Officer (as per section 22(2) of OSH Code, 2020)			No. of safety officers appointed	In case of mine 100 or more workers and in case of BoCW 250 or more workers are ordinarily employed.				
6.	Qualified Medical Practitioner (as per Section 12 (2) of OSH Code 2020.			No. of Qualified Medical Practitioner appointed.	There is no specification for minimum number of Qualified Medical Practitioner employed in establishment. However, this detail is required to have data on occupational health.				
7.	Whether Garden Hospitals/Group Hospitals/Dispensaries facility provided			Garden Hospitals/Group Hospitals/Dispensaries					
<b>F. The Industrial Relations:</b>								<b>Instructions for filling</b>	
1.	Is the Works Committee has been functioning. (section 3 of IR Code, 2020)			Yes/No		Industrial establishment in which 100 or more workers are employed			

(a)	Date of its constitution.					
2.	Whether the Grievance Redressal Committee constituted (section 4 of IR Code, 2020)				Yes/No	Industrial establish ment employing 20 or more workers are employed
3.	Number of Unions in the establishments.					
4.	Whether any negotiation union exist (Section 14 of IR Code, 2020)				Yes/No	
5.	Whether any negotiating council is constituted (Section 14 of IR Code, 2020)				Yes/No	
6.	Number of workers discharged, dismissed, retrenched or whose services were terminated during theyear:					
	<b>Discharged</b>	<b>Dismissed</b>	<b>Retrenche d</b>	<b>Terminated or Removed</b>	<b>Gran d Tota l</b>	
7.	<b>Man-days lost during the year on account of----- (except accidents)</b>					
Sl. No.	Reasons	Period / Date	No. of man-days lost	Loss in term of money		
(a)	Strike					
(b)	Lockout					
8.	<b>Details of retrenchment / lay off</b>					
Sl. No.	No. of persons retrenched during the period	Details of payment paid to retrenched employees	No. of workers laid off during the period	No. of man-days lost due to lay-off		
<b>G. Details pertaining to maternity benefit:</b>						
No. of female employees	No. of female employees available maternity leave	No. of female employees paid medical bonus	No. of deduction of wages, if any made from female employees			
<b>H. Details of payment of bonus:</b>						
Sl. No.	No. of employees covered under the Bonus provision	Total amount of bonus actually paid	Date on which the Bonus paid			
<b>I. Details of accidents, dangerous occurrence and notifiable diseases:</b>						



Sl. No.	Total number of accidents by which a person injured is prevented from working for a period of 48 hours or more as per Section 10 of the OSH Code, 2020.	Total number of fatal accidents and names of the deceased as per Section 10 of the OSH Code, 2020.	Total number of Dangerous Occurrences as defined under Section 11 of the OSH Code, 2020	Total number of cases of Notifiable Diseases specified in Third Schedule of the OSH Code, 2020 along with the details of affected persons

**J. Mandays and Production Lost due to accidents / dangerous occurrence**

Sl. No.	Accident/ Dangerous Occurrence	Mandays lost	Production Lost

**K. Details of Intertstate Migrant Workers**

No. of Interstate Migrant Workmen				No. of Interstate Migrant Workmen availed Journey Allowance				Total Amount Paid				Grand Total
Male	Female	Transgender	Total	Male	Female	Transgender	Total	Male	Female	Transgender	Total	

**L. Details Of Beedi and Cigar workers**

Sl. No.	Average No. of home workers worked during the year				Total No of Beedis rolled	Wages Paid			
	Male	Female	Transgender	Total		Male	Female	Transgender	Total
1									

Sl. No.	Average No. of Beedi workers worked during the year				Total No of Beedis rolled	Wages Paid			
	Male	Female	Transgender	Total		Male	Female	Transgender	Total
1									

**M. Details of Audio Visual Establishments**

Sl No	Description	Numbers	Remuneration paid in Rs
1.	No of written Agreements Entered		
2.	No Of Artists Engaged		
3.	No of Technicians Engaged		

**N. Motor Transport Undertaking**

Total No of Workers Employed	No of Routes Operated	Total No of Kilometers covered	Total Wages paid

--	--	--	--

**O. Leave Details**

<b>Leave Details / Earned Leave</b>				
<b>Category of Employees</b>	<b>Total no. of Employees</b>	<b>Total Eligible for Leave</b>	<b>Total No. of Employees availed leave</b>	<b>Total No. of Employees got encashment</b>
<b>Male</b>				
<b>Female</b>				
<b>Transgender</b>				
<b>Total</b>				

<b>Leave Details / Medical and other Leave</b>				
<b>Category of Employees</b>	<b>Total no. of Employees</b>	<b>Total Eligible for Leave</b>	<b>Total No. of Employees availed leave</b>	<b>Total No. of Employees got encashment</b>
<b>Male</b>				
<b>Female</b>				
<b>Transgender</b>				
<b>Total</b>				

**P. Wages paid**

<b>Category of Employees</b>	<b>Total man days worked in year</b>	<b>Total Man hours including O.T during the year</b>	<b>Total Wages / Salary including O.T. paid</b>
<b>Male</b>			
<b>Female</b>			
<b>Transgender</b>			
<b>Total</b>			

Signature of Employer/Manager or Agent :

Date :

**FORM-XIV****(See rule-38)****REGISTER OF ACCIDENTS AND DANGEROUS OCCURRENCES**

Name of Injured person (if any)	Date of Accident or dangerous occurrence	Date of report to Inspector Cum Facilitator-cum-Facilitator	Nature of accident or dangerous occurrence	Date of return of injured Person to work	Number of days the injured Person was absent from work
1	2	3	4	5	6

**FORM-XV****[See rule-39]****REGISTER FOR LEAVE WITH  
WAGES**

Part I - Adults

Part II - Adolescents

Establishment:

Name of worker:

Department:

Father's Name:

S l. N o	Sl.no. in the regist er of workers	Da te of ent ry int o ser vic e	Interruptions					Le av e du e wit h eff ect fro m	Whet her leave not desir ed duri ng the next 12 mont hs	Date from whic h the work er is allow ed leave	Wa ges for Lea ve Pai d in	Disch arged work er		R e m ar ks
			Sick ness and acci dent s	Auth orize d Leave	Lo ck Ou t or Le gal Str ike	Involun tary unempl oyment	Oth ers					Date of Disc harg e	Dat e & am ou nt of paym ent made in lieu of leave due	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

**Note:-**Separate page shall be allotted to each worker

**FORM -XVI**  
**(See rule-41(5))**

**IMPROVEMENT NOTICE AND PROHIBITION**  
**ORDER**

**PART I**  
**PROHIBITION ORDER**

Inspector Cum Facilitators Notice on Inspection of Establishment, Lifting Appliance, Loose Gears and other such gears, Equipment, Ladders and Staging. Inspector Cum Facilitator's notice to the occupier, employer, owner, master, Officer-in-charge, Owner of lifting appliances, loose gears and lifting devices or the person, scaffold who, by himself, his agents, or his employers as the case may be.

Name of the establishment, lifting appliance, lifting device, transport equipment, ladders and staging	Where situated lying/used/location	Registration no. of the establishment	LIN No. of the establishment
1	2	3	4

The activities connected with establishment which are being carried on by you/about to be carried on by you/under your control involve a risk or danger to the life. Safety and health of employee and involve the following contraventions :

**CONTRAVENTIONS**

Therefore. I hereby direct that the said activities shall not be carried on by you or under your control unless the said contraventions and matters mentioned have been remedied to the satisfaction of the Inspector Cum Facilitator. This order is being issued without prejudice or any legal action which may be taken for these contraventions.

On hearing from you that the requirements have been complied with the establishment, lifting appliance, loose gear or similar gear/transport equipment/ladders/ staging, scaffold shall again be visited with a view to the inspection being completed.

No. \_\_\_\_\_

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of 20 \_\_\_\_\_

Inspector Cum Facilitator under the Occupational Safety, Health and Working Conditions Code, 2020

**REQUIREMENTS**

On compliance with all or any of the above contraventions, the Inspector Cum Facilitator shall be informed in the manner prescribed overleaf, of the date and place at which the establishment, lifting appliance, loose gears or similar gear transport equipment, ladders and staging, scaffold can be re-inspected.

Sir,

The contravention notified by you have been effectively attended to. The establishment, lifting appliance, loose gears or similar gear, transport equipment, ladders and staging, scaffold shall be ready for inspection on the

date

Sir,

The contravention notified by you have been effectively attended to. The establishment, lifting appliance, loose gears or similar gear, transport equipment, ladders and staging, scaffold shall be ready for inspection on the date and place named below:

Date of Inspection	Place
Dated at _____ this day of _____ 20 _____	Employer, Occupier, Owner, Manager, Master, Officer- in-charge or Agents, owner of machinery and gear or the person, who by himself, his agents or his employers, carried on the establishment.

To

The Inspector Cum Facilitator under the Occupational Safety, Health and Working Conditions Code, 2020

## **PART - II**

### **Improvement Notice**

Inspector Cum Facilitators notice to the employer, Owner, Master, Manager, Officer-in-Charge or Agents, Owner of lifting appliances, loose gears lifting devices, scaffold or the person, who, by himself, his agents or his employers, carries on the establishment, as the case may be.....

Name of the establishment, lifting appliances, loose gear, lifting device, transport, equipment, ladders and stagings, scaffold;	Where situated/lying used/location	Port of Registry	Official no.(if any) of the ship

An inspection of the above-named establishment, ~~dock~~, ship, lifting appliances, loose gears, lifting devices, transport equipment, ladders and stagings, scaffold was made on .....

The following contraventions were observed. You are required to remedy the said contraventions and send the compliance report in writing within days.

This notice is being issued without prejudice to any legal action which may be taken for these contraventions on hearing from you that the requirements have been complied with the establishment, lifting appliance/loose gear or similar other gear/transport equipment/ladders/ staging, scaffold will again be visited with a view to the inspection being completed.

Contraventions No. \_\_\_\_\_ Dated \_\_\_\_\_ this \_\_\_\_\_ day  
of \_\_\_\_\_ 20 \_\_\_\_\_ Inspector Cum Facilitator under the  
Occupational Safety, Health and Working Conditions Code, 2020

Requirements. On compliance with all or any of the requirements, the Inspector Cum Facilitator should be informed in the manner prescribed overleaf of the date and place at which the establishment, lifting appliance, loose gear, transport equipment, ladders and staging, scaffold can be re-inspected.

The requirements noted by you have been effectively fulfilled. The establishment, lifting appliance, loose gear, lifting devices, transport equipment, ladders and staging, scaffold will be ready for inspection on the date and place named below:

Date of Inspection	Place
Dated at_____this day of_____ 20_____	Employer, occupier, Owner, Master, Manager, Officer-in-charge or Agents, owner of machinery and gear or the person, who, by himself, his agents or his employers, carried on the establishment.

To

The Inspector Cum Facilitator under the Occupation Safety, Health and Working Conditions Code, 2020.

**FORM - XVII**

**(See rule 54 (2), (3) (vii) & 144 (4))**

**Certificate of Fitness**

Name of the Factory

Address

Serial Number

I certify that I have personally examined **(name)** \_\_\_\_\_

son of **(Father's name)** \_\_\_\_\_

residing at **(address)** \_\_\_\_\_

who is desirous of being employed as **(designation)** \_\_\_\_\_

in **(process, department and factory)** \_\_\_\_\_

and that his age, as nearly as can be ascertained from my examination, is \_\_\_\_\_ years, and that he is, in my opinion, **fit / unfit** for employment in the above-mentioned factory as mentioned above.

He may be produced for further examination after a period of \_\_\_\_\_

The Serial Number of the previous certificate is \_\_\_\_\_

Signature or left-hand thumb impression of person examined \_\_\_\_\_

Signature of Certifying Surgeon \_\_\_\_\_

Date: \_\_\_\_\_

Medical Review / Extension Record

I certify that I  
examined the  
person mentioned  
above on

I extend this certificate until (if  
certificate is not extended, the  
period for which the worker is  
considered unfit for work is to be  
mentioned)

Signs and  
Symptoms  
observed during  
examination

Signature of  
the Certifying  
Surgeon



**FORM-XVII****(See rule 59, 62 (1) (4) and 64 (5))****APPLICATION FOR LICENSE**

<b>On Line Application for License/ Renewal of License/Amendment of License (including Common/single license)</b>										
Government of India, Ministry of Labour and Employment										
<b>ESTABLISHMENT PROFILE:</b>										
Labour Identification Number			Date							
Acknowledgement Number: ..... Date of Application: .....										
<b>I. Particulars of Establishment for which licence required:</b>										
1. Name of Establishment:										
2. Address of establishment										
(a) Head Office address along with email Id :										
(b) Corporate office address along with email Id:										
3. Telephone Number :										
4. Activity as per National Industrial Classification : (Select all applicable activities given)										
5. Details of selected NIC Code:										
6. Nature of work carried on in main establishment :										
7. Identifier of the Establishment : (Select) : esign/digital sign										
<b>II. Details of Employer:</b>										
1. Full Name of Employer:.....relationship with establishment.										
2. Full Address of Employer:										
3. Email Id of employer:										
4. Mobile No. of employer:										
<b>III. Particulars of the Contract Labour to be employed / is employed (If licence is required workwise)</b>										

Locations of worksites	Name of works	Activity as per national industrial classification	Date of commencement	Date of completion	Name of Establishments in which contract labour is/proposed to be employed	Name Address, email id of the Site Incharge
1	2		3	4	5	6
5. Maximum number of workmen proposed to be employed on the Establishment on any date: <b>24</b>						
6. Amount of Licence Fee: <b>INR</b> ( Transaction Id : )						
7. Amount of Security Deposit: <b>INR</b> ( Transaction Id : )						
<b>IV. DETAILS OF ESTABLISHMENTS FOR WHICH COMMON LICENCE REQUIRED , (IF APPLYING FOR)</b>						

Type of Establishments	Name & Address of establishment	(i) Nature of work carried out in the establishment (ii) Activity as per National Ind'l classification	Date of commencement	Permanent establishment or probable date of completion	Maximum number of employees employed/ proposed to be employed	Maximum number of employees employed/ proposed to be employed
1	2	3	4	5	6	7

**V. DETAILS OF ESTABLISHMENTS FOR WHICH SINGLE LICENCE IS REQUIRED (IF APPLYING FOR)**

Name of States in which the establishments are situated	Name of each work	Maximum number of labour will be/is employed	Date of commencement	Permanent establishment or probable date of completion	Maximum number of employees employed/ proposed to be employed	Registration number, if obtained, then details thereof
1	2	3	4	5	6	7

<b>Signature of Contractor</b>
<b>(eSign/DSC)</b>
<b>Note:</b> This is an online application summary applied on Shram Suvidha Portal.
<b><u>APPLICATION FOR RENEWAL OF LICENCE</u></b>
1. Licence No. _____ Date : _____
2. LIN & PAN _____
2. Name and address of the establishment: _____
3. Date of expiry of previous licence : _____
4. Whether the licence of the employer/contractor was suspended or revoked: _____
5. Details of Fees paid : (Enclose e-payment receipt): Amount.... date of payment: _____
E-sign /digital sign of the employer/contractor date: _____
<b><u>APPLICATION FOR AMENDMENT OF LICENCE :</u></b>
1. Licence No _____ Date: _____
2. LIN & PAN _____
3. Name and address of the establishment: _____
4. Details for which amendment is sought : _____

(a). Maximum number of worker presently employed : (If there is increase in the maximum number of workers to be employed, then additional fees/security deposit as per law needs to be deposited:
(b). Details of fees paid through e payment date on which made :
©. Other details requiring amendment in the licence issued (Necessary documents may be uploaded in support of change required)

**E-sign /digital sign of the employer/contractor**

**date of application.**

**FORM-XIX****(See rule 60 (1))****PROFORMA OF LICENSE**

Licence No.-----

Reg. No.-----

Date of Reg.-----

Licence is here by granted to ..... for the premises known as .....

For use as a establishment within the limits stated hereinafter, subject to provisions of the Occupational Safety, Health and Working Conditions Code, 2020, and the rules made there under.

The-----20..

Issuing Authority

Sl.No.	Period of issue	Valid For	Fee	Date of Payment	Exc ess fee for late payment	Date of payment	Signat ure of the Issuin g Authority
		Maximum number of Contract labour /workers on any one day					

**AMENDMENTS:**

Year when Amended	Maximum number of Contract labour /workers on any one day	Date of payment of amendment fee	Date of Payment	Signature of the Issuing Authority

**FORM XX**

**(See rule 65 (1))**

**NOTICE OF INTIMATION OF WORK ORDER AND TIME LIMIT FOR INTIMATION**

- 1) Registration No :
- 2) Name and Address of the Establishment :
- 3) Name and Designation of Principal Employer (Who has ultimate control over the affairs of the establishment) :
- 4) Full Address to which communication relating to the establishment to be sent:
- 5) Nature of the work of the establishment:
- 6) Date of Commencement of the Contract Work :
- 7) No. of Contract Labour employed under that work order :
- 8) Duration of the work order :
- 9) Details of work order (Copy to be enclosed) :

I/We hereby declare that the particulars given above are true to the best of my knowledge and belief.

Signature of the  
Contractor/Manager/Authorized person.

Place :

Date :

**FORM-XXI**

**(See rule-69)**

**EXPERIENCE CERTIFICATE**

<u>To whom so ever concerned</u>
1. Name of employer/ contractor *:
2. LIN/PAN No. of the employer/ contractor *:
3. Email Id of the employer/ contractor *:
4. Mobile No. of the employer/ contractor *:
5. Nature and location of work:
6. Name of Principal Employer (incase of contract workers)*:
7. LIN/PAN No. of the Employer:*
8. Email Id of the Employer :*
9. Mobile No. of the Principal Employer:*
10. Name of the worker*:
11. UAN / AadhaarNo.:
12. Mobile No. :
13. Serial Number in the Employee Register:
14. Registration number, date and name of the Board if the building and other construction worker is registered as a beneficiary:
15. Period of Employment:
16. Designation:
Seal and Signature of Employer/Contractor
*Please strike off whichever is not applicable.

**FORM XXII**  
**(See rule 70 (1))**  
**Application by aggrieved party disputing Core activity.**

**To,**  
**The Secretary to the Government.**  
**Department of Labour,**  
**Government of Karnataka.**

1	Name and address of the Establishment where Contract Workers are employed		
2	Name and address of Contractors / Sub Contractors		
3	Contractor Labour Licence No. and Date		
4	Since when the Contract Workers are employed in the establishment		
5	Factory / Plantation / Beedi Cigar / and other Establishment Licence No. and Date		
6	Core Activity / Main activity of the Factory / Establishment		
7	Activity in which Contract Workers / are employed		
8	No of workers	Contract workers	
		Permanent workers	
9	Name and address of the Party which raised the dispute  Principal Employer / Contractor / Sub Contractor / Trade Union / Workers		
10	Name of the party against whom the applicant raised the dispute		
11	Brief description of the dispute		

The under signed state that the facts given above are true to the best of my knowledge and belief.

Date:  
Place:

Signature of the Applicant  
(Principal Employer / Contractor  
/ trade Union / Workers)

**FORM XXIII**  
**(see rule-72 (2))**

**JOURNEY ALLOWANCE REGISTER**

Name and address of the Contractor.  
Name and address of the principal Employer.  
Name and address of the Establishment.  
Month and year.

01	Serial No	
02	Name of the migrant workman	
03	Father's /Husband name	
04	Permanent home address indicating the state	
05	Place and Address of residence in Home State	
06	Designation	
07	Rate of wages	
08	Place of work	
09	Railway station / Bus stand nearest to place of work	
10	Railway station / Bus Stand nearest to the place of residence in the home state	
11	Date and time of the commencement journey from the place of work	
12	Expected date and time of arrival at the residence in the home State	
13	Expected modes of journeys from place of work to place of residence in the home to state	
14	Amount of bus fare and / or second-class train fare and / or other journey expenses separately as per expected modes of journey in column (13)	
15	Total amounts indicated in column no (14)	
16	Amount of return journey allowance	
17	Wages for return journey period	



18	Total amount paid	
19	Date on which paid	
20	Signature or thumb -impression of the migrant work man	
21	Remarks	

**FORM-XXIV**

**(See rule 76 (1))**

**AGREEMENT BETWEEN PRODUCER AND AUDIO-VISUAL  
WORKER**

This agreement is made on this day ..... month .....year.....between  
Messrs  
..... havi  
ng office at  
..... (herein after referred to as the –Producer) on the  
first part and Shri/Smt/Kum  
.....son/daughter/wife of Shri.....residing at (hereinafter referred to as  
the audio-visual worker) the second part. The terms ‘Producer’ and ‘audio visual worker’  
shall include their heirs, successors, administrators and legal representatives:  
Now, therefore this agreement is made as follows:

1. That both the parties agree that the duration of this agreement shall be from the date hereof till the completion of the audio-visual and this period shall not exceed consecutive months.
2. That the audio-visual worker agrees to attend studio, location or work place, as the case may be, subject to the requirement of his previous engagement and on his confirmation, to his respective job punctually as and when he shall be required by a written intimation by the Producer or the person duly authorised by him in writing.
3. That in consideration of the audio-visual worker services, as aforesaid, the Producer agrees to pay and the audio-visual worker agrees to receive a sum of Rs. ....(Rupees ..... ) payable as advance on signing of this agreement and the balance of Rs.....payable in ..... equal installments.
4. That in the event of the audio-visual production being not complete within the stipulated period and the Producer still needing the services of the audio-visual worker to complete the audio-visual production, the producer agrees to pay and the audio-visual worker agrees to receive additional remuneration on pro-rata basis, payable in the same manner as stated in Clause 3 above, till the completion of the production.
5. That in case the assignment of the audio-visual worker is completed earlier than the period stipulated in Clauses 1 and 4 above, the producer shall settle the account of the audio-visual worker and pay the remaining balance of the agreement amount in full before the commencement of re-recording work/censor of the production, whichever is earlier.
6. That the audio-visual worker shall, if so required,
  - (a) attend the studios, location or work-place, as the case may be, earlier than the a scheduled time of the shift, for preparatory work, and in that case, he/she shall be paid by the Producer extra wages at the rate of Rs.....per hour or part thereof for such early attendance.
  - (b) continue to work beyond the working day, with one hour break and in that case, he/she shall be paid by the Producer extra wages at the rate of Rsfor the work during the extended hours and refreshments, and transport facilities.
8. That the Producer shall provide transport and food or pay traveling allowances to and fro to report to duty and food allowance while on duty as are customary or fixed by bilateral arrangements between the Producer's and audio-visual worker's representative organizations.
9. That the Producer shall also pay for all travelling and accommodation expenses, fares, cost of food and such other allowances as are customary when the audio-visual worker is required to work on location outdoors.
10. That the Producer shall get the audio-visual worker insured for any injury or damage to his/her person including death caused by accident arising out of or in the

course of his/her employment and/or during the period of his/her assignment under this agreement.

11. That where the Producer is prevented from proceeding with the production of the audio-visual by reason of fire, riot, natural calamity, order of the public authority or any other reason beyond his control:-

- (a) he shall be entitled to suspend the operation of this agreement during the period of suspension of production in case the production is suspended. The producer shall serve notice in writing of such suspension on the audio-visual worker and shall pay all his/her dues up to the date of service of such notice. Upon resumption of work on the film, this agreement shall revive and shall remain valid for the period stipulated in Clause I excluding the period of suspension there from ;or
- (b) he shall be entitled to terminate this agreement as from the cessation of production, in case the production ceases completely. The producer shall serve a notice in writing of such cessation on the audio-visual worker and make payment of all the amount due to the audio-visual worker at the time of termination.

12. That in case if the Producer desires to terminate this agreement before the expiry of its term for reasons other than misconduct in relation to performance of the audio-visual worker's duties or of his/her unwillingness to perform the services required under this agreement, the producer shall be entitled to do so only upon payment of the balance of the stipulated amount of the agreement. Only after such payment to the audio-visual worker, the Producer shall be titled to employ another audio-visual worker in his/her place.

13. That the Producer shall have the right to terminate this agreement on ground of misconduct on the part of the audio-visual worker in relation to performance of his/her duties or his/her unwillingness to perform the service required under the agreement, upon payment to the audio-visual worker of the amount due at the time of termination, calculated taking into consideration the audio-visual worker's total work in the audio-visual and the work he has completed till the date of termination of this agreement. Termination under this clause shall not be made unless the charges of the Producer against the audio-visual worker are proved before a forum comprising equal number of representatives of the Producers' Organisation and the audio-visual worker's Organisation to which the Producer and the audio-visual worker respectively may belong. The decision of the forum shall be binding on both the parties. The producer can engage another audio-visual worker for the job towards this agreement only after the forum has given a decision in favour of such termination and the audio-visual worker has been paid all his dues.

14. That in case of premature termination of this agreement, it shall be the option of the Producer whether or not to retain the work of the audio-visual worker in the audio-visual and at the same time, it shall be option of the audio- visual worker whether or not to allow his name to go on the credit titles of the film.

15. That the Producer shall have the right to decide the manner of representing the audio-visual worker's personality on the screen, his clothes, make-up and hair-style and the audio-visual worker shall fully and willingly comply with the direction of the Producer in this regard, provided that the requirements of the Producer in this respect have been notified to the audio-visual worker and accepted by him.

16. That the audio-visual worker agrees that he/she shall render his/her services to the best of his/her ability in such manner as the Producer or, at his instance, the Director of the audio-visual may direct and shall comply with all reasonable instructions that he may give for the production of the film.

17. That the Producer shall also pay for all traveling and accommodation expenses, fares, cost of food and such other allowances as are customary when the audio-visual worker is required to work on location outdoors.

18. That the Producer shall get the audio-visual worker insured for any injury or damage to his/her person including death caused by accident arising out of or in the course of his/her employment and/or during the period of his/her assignment under this agreement.

19. That where the Producer is prevented from proceeding with the production of the audio-visual by reason of fire, riot, natural calamity, order of the public authority or any other reason beyond his control:-

- (a) he shall be entitled to suspend the operation of this agreement during the period



**FORM-XXV****(See rule 78 (1), 80 (1) and 81 (1))****APPLICATION FOR LICENSE FOR BEEDI WORKS**

<b>On Line Application for License/ Renewal of License/Amendment of License</b>						
<b>ESTABLISHMENT PROFILE:</b>						
Labour Identification Number				Date		
Acknowledgement Number: .....				Date of Application: .....		
<b>I. Particulars of Establishment for which licence required:</b>						
1. Name of Establishment:						
2. Address of establishment						
(a) Head Office address along with email Id :						
(b) Corporate office address along with email Id:						
3. Telephone Number :						
4. Activity as per National Industrial Classification : (Select all applicable activities given)						
5. Details of selected NIC Code:						
6. Nature of work carried on in main establishment :						
7. Identifier of the Establishment : (Select) : e sign/digital sign						
<b>II. Details of Employer:</b>						
1. Full Name of Employer: .....relationship with establishment.						
2. Full Address of Employer:						
3. Email Id of employer:						
4. Mobile No. of employer:						
<b>III. Particulars of the Contract Labour to be employed / is employed (If licence is required work wise)</b>						
Locations of worksites	Name of works	Activity as per national industrial classification	Date of commencement	Date of completion	Name of Establishments in which contract labour is/proposed to be employed	Name Address, email id of the Site Incharge
1	2		3	4	5	6
5. Maximum number of workmen proposed to be employed on the Establishment on any date: <b>24</b>						
6. Amount of Licence Fee: <b>INR</b> ( Transaction Id : )						
7. Amount of Security Deposit: <b>INR</b> ( Transaction Id : )						
<b>IV. DETAILS OF ESTABLISHMENTS FOR WHICH COMMON LICENCE REQUIRED , (IF APPLYING FOR)</b>						

Type of Establishments	Name & Address of establishment	(i) Nature of work carried out in the establishment (ii) Activity as per National Ind'l classification	Date of commencement	Permanent establishment or probable date of completion	Maximum number of employees employed/proposed to be employed	Maximum number of employees employed/proposed to be employed
1	2	3	4	5	6	7

**V. DETAILS OF ESTABLISHMENTS FOR WHICH SINGLE LICENCE IS REQUIRED (IF APPLYING FOR)**

Name of States in which the establishments are situated	Name of each work	Maximum number of labour will be/is employed	Date of commencement	Permanent establishment or probable date of completion	Maximum number of employees employed/proposed to be employed	Registration number, if obtained, then details thereof
1	2	3	4	5	6	7

<b>Signature of Contractor</b>
<b>(eSign/DSC)</b>
<b>Note:</b> This is an online application summary applied on Shram Suvidha Portal.
<b><u>APPLICATION FOR RENEWAL OF LICENCE</u></b>
1. Licence No. _____ Date : _____
2. LIN & PAN _____
2. Name and address of the establishment: _____
3. Date of expiry of previous licence : _____
4. Whether the licence of the employer/contractor was suspended or revoked: _____
5. Details of Fees paid : (Enclose e-payment receipt): Amount.... date of payment: _____
E-sign /digital sign of the employer/contractor _____ date: _____

<b><u>APPLICATION FOR AMENDMENT OF LICENCE :</u></b>
1. Licence No _____ Date: _____
2. LIN & PAN _____

3. Name and address of the establishment:
4.Details for which amendment is sought :
(a). Maximum number of worker presently employed : (If there is increase in the maximum number of workers to be employed, then additional fees/security deposit as per law needs to be deposited:
(b). Details of fees paid through e payment date on which made :
©. Other details requiring amendment in the licence issued (Necessary documents may be uploaded in support of change required)

**E-sign / digital sign of the employer/contractor**

**date of application.**

**FORM-XXVI****(See rule- 78 (3) and 79 (1))****PROFORMA OF LICENSE FOR BEEDI WORKS**

Licence No.----- Reg. No.----- Date of Reg.-----

Licence is hereby granted to..... for the  
premises known as ..... situated at

.....

For use as a establishment within the limits stated here in after, subject to provisions of the Occupational Safety, Health and Working Conditions Code, 2020, and the rules made thereunder.

The-----20..

Issuing Authority

Sl.No.	Period of issue	Valid For	Fee	Date of Payment	Exc ess fee for late payment	Date of payment	Signat ure of the Issuin g Authority
		Maximum number of Contract labour /workers on any one day					

**AMENDMENTS:**

Year when Amende d	Maximum number of Contract labour /workers on any one day	Date of payment of amendment fee	Date of Payment	Signature of the Issuing Authority



**FORM-XXVII**

**(See rule- 85)**

**MONTHLY RETURN FOR BEEDI WORKS**

1. Name of industrial premises and full postal address.....
  2. No. and date of license.....
  3. Month to which the return relates.....
  4. Name of the employer.....
  5. Name of the principal employer if the employer is working as contractor for the Principal Employer.....
  6. Quantity of beedi and/or cigar tobacco released by the Central Excise Department.....
  7. Quantity of beedi and/or cigar tobacco supplied by the Principal Employer.....
  8. Number of beedis and/or cigars manufactured by the employer in an industrial establishment.....
  9. No. of beedis and/or cigars manufactured by the employer in places other than industrial establishment, i.e., workers working in their homes.....
  10. Number of beedis and/or cigars sold and to whom.....
- Dated.....

Signature of the Employer

**FORM-XXVIII**  
**(See rule- 85)**  
**ANNUAL RETURN FOR BEEDI WORKS**

1. Name and address of the industrial premises.....
2. Number and date of licence.....
3. Name of the employer.....
4. Name of the principal Employer, if the employer is working as contractor for a Principal Employer.....
5. Average number\* of employees employed daily in the industrial premises.....

Men

Women

Young

persons

Male

Female

6. Average monthly number of home-workers employed (i.e., who work at their homes)\*\*.....

7. Normal hours worked per week in the industrial premises.....

8. Number of days worked in the year in the industrial premises.....

9. Number of employees who were granted leave during the Calendar year.....

*Young persons*

(a) employed in the industrial premises.....

(b) employed in homes.....

*Other than young persons*

(a) employed in the industrial premises.....

(b) employed in homes.....

10. Number of female employees who were given maternity benefit during the year.....

(a) employed in industrial premises.....

(b) employed in homes.....

Certified that the information furnished above is correct to the best of my knowledge and belief.

Date

Signature

**Note.** - Partial attendance for less than half a shift or working day shall be neglected and attendance for half a shift or more shall be treated as full attendance.

\*The average daily number shall be calculated by dividing the aggregate number of attendance of working days by the number of the working days in the year. Attendance on separate shifts, e.g., night and day shifts shall be counted separately.

\*\*The average shall be calculated by dividing the aggregate number of workers on the Home-workers Employment Register during each of the preceding 12 months by twelve.

**FORM-XXIX****(See rule-86 (1))****Home Workers' Log Book**

1. Name of home worker.....
2. Address of the home where the manufacturing process is carried on.....
3. Month.....

**Account of Work Done at Home**

Date	Raw Material supplied to the worker			Signature or thumb impression of the worker	No. of beedis received by the employer
	Tendu patta	Tobacco	Thread		
(1)	(2)	(3)	(4)	(5)	(6)

No. standard of beedis	Number of substandard or chhat beedis	Wages payable to worker		Wages paid to the worker
		For standard beedis	For sub-standard or chhat beedis	
(7)	(8)	(9)	(10)	(11)

Date	Amount of wages to date in arrears	Signature or thumb impression of the worker	Signature of the Employer
(12)	(13)	(14)	(15)

**FORM-XXX**

**(See rule- 86 (2))**

**HOME-WORKERS' EMPLOYMENT REGISTER**

***Beedis manufactured should be shown in respect of each home worker below the appropriate date***

Name of worker	Address of Home	Wages paid	Dates
			1 2 3 4 5 6 7 8 9 10 to 31

**FORM-XXX - A**

*(See Rule 87(2))*

Register of Work Permitted to be Carried on Outside the Industrial Premises

**1. Name of the Employer**

---

**2. Address of the Industrial Premises**

---

---

**3. License Number issued under Section 74**

---

**4. Date of Issue of License**

---

**5. Nature of Work Permitted** (✓ tick applicable)

☐ Wetting of beedi / tobacco leaves

☐ Cutting of beedi / tobacco leaves

**6. Permission Number and Date (Rule 87(1))**

---

**7. Address of the place(s) where work is permitted outside the industrial premises**

---

---

**8. Period for which permission is granted**

From \_\_\_\_\_ To \_\_\_\_\_

**9. Total number of employees permitted to work outside the industrial premises**

---

---

**10. Details of Employees Engaged**

Sl. No.	Name of Employee	Age Gender	Nature of Work (Wetting / Cutting)	Address of Place of Work	Period of Work
------------	---------------------	------------	---------------------------------------	-----------------------------	-------------------

Sl. No.	Name of Employee	Age	Gender	Nature of Work (Wetting / Cutting)	Address of Place of Work	Period of Work
1						
2						
3						
4						

---

**11. Whether the total number of employees engaged outside the premises is within the limit permitted under Section 74**

☐ Yes ☐ No

**12. Remarks, if any**

---



---



---

**Declaration**

I hereby declare that the particulars furnished above are true and correct to the best of my knowledge and belief. The work of wetting or cutting of beedi or tobacco leaves is carried on strictly in accordance with the permission granted under Rule 87 and subject to the terms and conditions specified therein.

---

**Signature of Employer / Authorized Signatory**

---

**Name** \_\_\_\_\_

**Designation** \_\_\_\_\_

**Date** \_\_\_\_\_

**Place** \_\_\_\_\_

**Form-XXXI**  
**(See rule 88 (2))**  
**Application Form for Plan Approval for establishment of a factory**

(Add PAN Number and GST Number to the application)

<b>1. Applicant's Name(As per Aadhaar)*</b>		<input type="text"/>
<b>Applicant's Designation*</b>		<input type="text"/>
<b>Applicant's Address</b>	Address Line 1*	<input type="text"/>
	Address Line 2	<input type="text"/>
	Post*	<input type="text"/>
	District*	<input type="text"/>
	Taluk*	<input type="text"/>
	Pincode*	<input type="text"/>
	Phone No(Landline)	<input type="text"/>
	Mobile No*	<input type="text"/>
	Email ID*	<input type="text"/>

  

<b>2. Full Name and Location Address of the Factory</b>	
Full Name of Factory*	<input type="text"/>
Address Line 1*	<input type="text"/>
Address Line 2	<input type="text"/>
Post*	<input type="text"/>
District*	<input type="text" value="Select District"/>
Taluk*	<input type="text" value="Select Taluk"/>
Pincode*	<input type="text"/>
E-mail	<input type="text"/>
Mobile No*	<input type="text"/>

  

<b>3. Particulars of Building &amp; machinery:*</b>	<input type="text" value="Select"/>
---	-------------------------------------

  

<b>4. Documents Required (pdf only)</b>
<p>i. Factory Plan.</p> <p>ii. Sale deed / Rent Agreement / Lease deed / possession certificate / Tax paid Receipt / Allotment letter.</p> <p>iii. Brief description of Manufacturing process with Flow chart.</p> <p>iv. Certificate of Stability of the Building (Not applicable in case of Proposed building).</p> <p>"Any other documents the approval authority opines The occupier to obtain previous permission in writing of the Inspectorate of Factories and Boilers before citing, constructing the factory building at the entry level and also the permission is required whenever the factory is extended or machineries and plants are added."</p>

  

<b>5. Details of Manpower</b>	
a. Total Men Count:*	<input type="text"/>



b. Total Women Count:*	<input type="text"/>
• Is Creche provided :	Select ▼
c. Total Worker's Count: *	<input type="text"/>
• Is lunch room provided :	Select ▼
• Is canteen provided :	Select ▼
e. HP as per plan attached: *	<input type="text"/>
f. K.W as per plan attached: *	<input type="text"/>
g. Is the Manufacturing process coming under the definition of hazardous process defined under section 2(cb) of the Factories Act, 1948:	Select ▼
h. Status of approval of On-Site Emergency Plan, in case of manufacturing process coming under the Hazardous process defined under section 2(cb) of the Factories Act, 1948	Select ▼
a. Is Occupational Health center with minimum floor area of 15sq.m Provided:	Select ▼
b. Is Occupational Health center with at least two rooms each a minimum floor area of 15sq.m Provided:	Select ▼
c. Is Ambulance Room provided :	Select ▼

#### 6. Block 7

a. Is certificate of Stability obtained in case of building to be used as a Factory? *	Select ▼
b. Is a clear spacing of three feet around each machine maintained, if applying for approval of machinery layout? *	Select ▼
c. Have you applied to public health authority for approval of arrangements for disposal of trade waste? *	Select ▼
d. Have you applied to the petroleum & explosive Organization? If applicable. *	Select ▼
e. Names of Inflammables solvents or liquids being used in the manufacturing process and estimated quantity required per day. *	<input type="text"/>
f. In case where combustible materials are available in the work area, details of fire prevention methods adopted/proposed to be adopted. *	<input type="text"/>

#### 7. Fees Details:\*

Amount to be Paid*	<input type="text"/>
Amount in words*	<input type="text"/>

**Note :-** This Application shall be accompanied by the following documents :-

- 1) A flow chart of the manufacturing process supplemented by a brief description of the process in its various stages.
- 2) Plans drawn to scale showing.
  - The situation of the Factory and immediate surrounding buildings and other structures, Roads, drains, etc., and
  - The plan, elevation & necessary cross-sections of the various buildings indicating all details relating to natural lighting, ventilation, means of escape in case of fire & Stability of structures. The plans shall also clearly indicate the position of plant & machinery, aisles and **[passage ways]** ; and

## **CERTIFICATE OF STABILITY**

1. Name of the Factory :
2. Full postal address of the factory :  
(Indicate geo co-ordinates of the factory)
3. Village, Hobli, Taluka & District in which the factory is situated :
4. Nature of manufacturing process to be carried on in the Factory :
5. Number of floors on which workers will be employed. :
6. Material of construction. Walls, roof, flooring etc. :
7. Number of buildings/ structures, give details :
  - (a) Constructed area on ground floor
  - (b) Total Constructed area and height of each floor
8. STABILITY OF Re-inforced concrete MEMBERS:
  - (a). PHYSICAL OBSERVATIONS:
    - I. Settlement of flooring/foundation in any part of the building if any.
    - II. Plinth protection if any.
    - III. Cracks along the rebars, spalling of cover concrete and exposure of corroded rebars if any.
    - IV. Hairline cracks in beams, walls and slab if any.
    - V. Distress features in r c columns and beams if any.
    - VI. Deboning of plaster in RC columns and beams if any.
    - VII. Damp patches and peeling of paint in ceiling slabs/walls if any.
    - VIII. Deterioration of water proof course if any.
    - IX. Column dowel bars unprotected if any.
    - X. Rainwater harvesting system if any.
    - XI. Rooftop Solar panels if any.
    - XII. Underground sump/water tank /ESR if any.
  - (b) EVALUATION TESTS
    - i. Dimensional measurements of structural members.
    - ii. Examination of foundation system and tests on soil at founding level.
    - iii. Non-Destructive tests to assess the quality / strength of in-situ concrete in RC members.
    - iv. Rebound Hammer test on RC slabs, columns, beams and bricks.
  - (c) RESTORATION MEASURES
    - i. Treatment for corrosion distressed of floor/roof slab.
    - ii. Treatment for cracks in masonry walls.
    - iii. Treatment for dampness in masonry walls.
    - iv. Treatment for separation cracks.
    - v. Treatment for Plinth Protection.
    - vi. Treatment for RC members.
9. STABILITY OF STEEL MEMBERS:
  - (a) PHYSICAL OBSERVATIONS:
    - i. Member stability of all structural steel members (Deflected member if any.)
    - ii. Cracks in roof and wall claddings if any.
    - iii. Distress in Purlins, truss members, bracings if any.
    - iv. Corrosion of steel members if any.

- v. Distress of RC Pedestal, anchor bolts if any.
- vi. Distress in Steel Chimney and Machine foundation if any.

(b) EVALUATION TESTS

- i. Non-Destructive tests to assess the quality / strength of in-situ concrete in RC Pedestal
- ii. Members.
- iii. Examination of foundation system and tests on soil at founding level.
- iv. Examination of Base/Bearing Plate with anchor bolts.

(c) RESTORATION MEASURES

- i. Treatment for corrosion distressed of structural steel members.
- ii. Treatment for Pedestal distressed.
- iii. Treatment for dampness in masonry walls.
- iv. Treatment for Plinth Protection.
- v. Treatment for roof and side claddings.
- vi. Treatment for Steel Chimney and Machine foundation.

(d) IS CODES:

- i. NDT testing by rebound hammer: IS 13311 (PART-2).
- ii. Analysis and design for RCC members: IS 456-2000.
- iii. Analysis and design for Steel members: IS 800-2007.
- iv. Wind load analysis: IS 875-Part-3(2015).
- v. Earthquake analysis for RC Structures: IS 1893-2016(part-1) and IS 13920-2016.
- vi. Analysis and design of Machine Foundation: IS 2974(part-1 to part-5).
- vii. Seismic Evaluation and Strengthening of existing reinforced concrete buildings:  
IS 15988-2013.
- viii. Soil Safe Bearing Capacity: IS 6403-981.
- ix. Code of practice for design and construction of steel chimney: IS 6533-1-1989.
- x. IS: 1786 – 1985: Specification for High Strength Deformed Steel Bars & Wires For Concrete Reinforcement.
- xi. IS: 1904: Indian Standard Code of practice for Design & Construction foundations in Soil: General Requirements.
- xii. IS: 875(Part-I) – 1987: Code of Practice for Design Loads (Other than Earthquake) for Building and Structures-Unit Weight of Building Materials and Stored Material.
- xiii. IS: 875(Part-II) – 1987: Code of Practice for Design Loads (Other than Earthquake) for Building and Structures-Imposed loads.
- xiv. IS: 875(Part-IV) – 1987: Codes of Practice for Design Loads (Other than Earthquake) for Building& Structures- Special Loads and Load Combinations.

10. Tests applied;-

Rebound Hammer test, Ultrasonic pulse velocity test, any other tests (specify the test and findings);

11. Details of examination of other steel structures and roofing :

(a) high raised chimney: state it is self supported or tied by tensioning ropes; are the tensioning ropes/ foundation fastening safe and in good state :

(b) Observation regarding steel structures, if any:

(c) Observation regarding stability of sheet roofing; if any:

(d) Defects/ requirement of repair if any;

I, Certify that I have inspected the buildings on the . . . . day/s of . . . . . 20. . . , in which . . . . . is housed and examined the various parts including the foundations as shown in the complete plans sent to the Chief Inspector Cum Facilitator for approval, with special reference to the machinery, plant, etc., that have been installed. I am of opinion that the buildings have been constructed/extended in accordance with the plans sent to Chief Inspector Cum Facilitator by, the management, and that they are structurally sound and its stability will not be endangered by its use as a factory for the manufacture of . . . . .for which the machinery, plant, etc., installed are intended.

**PLACE:**

**(SIGNATURE)**

DATE :

Name, Designation And Qualifications

**FORM-XXXII****(See rule 89 (3))****Form of Certificate of Registration**

Registration No.

Date

A Certificate of registration containing the following particulars is hereby granted under sub section (2) of section 3 of the Occupational Safety, Health and Working Conditions Code, 2020 (....of 2020) to(Name of the establishment)

5. Nature of work carried on in the establishment (Please tick mark)
- (f) Establishment (b)Factory (c) Dock work
- (c) any other work (not covered above)
6. Details of the establishment:
- a. Total Number of employees engaged directly in the establishment:
- b. Total Number of the employees engaged through contractor.....
- c. Total Number of Contractors and their details:
- d. Number of inter-state migrant workers engaged:

**3(a) For Establishment**

Details of the Activity Carried on	Full postal address and situation of the festablishment	Name and address of the employer	Maximum number of employees to be employed on any day	Remarks
1	2	3	4	5

**3(b) For factories**

Details of the manufacturing process carried on	Full postal address and situation of the factory along with plan approval details	Name and address of the occupier	Maximum number of workers to be employed on any day	Total HP/KW of the machineries installed in the factory
1	2	3	4	5

6. Amount of registration fee paid.....
7. Remarks of registering officers;

Signature E -Sign/DSC of  
Registering Officer along with  
designation

**Conditions of Registration**

- (1). Every certificate of registration issued under rule 3 shall be subject to the following conditions, namely:

- (a). the certificate of registration shall be non-transferable;
- (d) the number of workers employed in an establishment directly and contract employees shall not, on any day, exceed the maximum number specified in the certificate of registration; and
- (e) Save as provided in these rules, the fees paid for the grant of registration certificate shall be non- refundable.
- (4) The employer shall intimate the change, if any, in the number of workers or the conditions of work to the registering officer within 30days
- (5) The employer shall, within thirty days of the commencement and completion of any work, intimate to the Inspector Cum Facilitator, having jurisdiction in the area where the proposed establishment or as the case may be work is to be executed, intimating the actual date of the commencement or, as the case may be, completion of establishment such work in **Form IV** annexed to these rules electronically.
- (6) A copy of the certificate of registration shall be displayed at the conspicuous places at the premises where the work is being carried on.

**FORM-XXXIII****(See rule-89 (6))****REGISTER OF FACTORIES**

SI. No.	Nature of work	Registration No. and Date	Name and Address, location of the establishment registered	Name, Address and Contact Details of Employer	Total number of Workers and Total Horse Power/KW ( if any)	Total number of Workers	Remarks
1	2	2	3	4	5	6	
	(a) Factories (b) Mines (c) DockWork (d) Any other Work (not covered above)						

**Form XXXIV**

**(See rule-97 (5) & 101 (3))**

**Application to site Appraisal Committee**

**1. Name and address of the applicant :**

**2. Site Ownership Data:**

(1). Revenue details of site such as survey No., Plot No. etc.

(2). Whether the site is classified as forest and if so, whether approval of the Central Government under Section 5 of the Indian Forests Act, 1927 has been taken.

(3). Whether the proposed site attracts the provisions of Section 3 (2)(v) of the E.P. Act, 1986, if so, the nature of the restrictions.

(4). Local authority under whose jurisdiction the site is located.

**3. Site Plan :**

(1). Site Plan with clear identification of boundaries and total area proposed to be occupied and showing the following details nearby the proposed site :

(a) Historical monument, if any, in the vicinity.

(b) Names of neighbouring manufacturing units and human habitats, educational and training institutions, petrol installations, storages of LPG and other hazardous substances in the vicinity and their distances from the proposed units.

(c) Water sources (rivers, streams, canals, dams, water filtration plants, etc.) in the vicinity.

(d) Nearest hospitals, fire-stations, civil defence stations and police stations and their distances.

(e) High tension electrical transmission lines, pipe lines for water, oil, gas or sewerage, railway lines, roads, stations, jetties and other similar installations.

(2). Details of soil conditions and depth at which hard strata obtained.

(3). Contour map of the area showing nearby hillocks and difference in levels.

(4). Plot Plan of the factory showing the entry and exit points, roads, within, water drains etc.

**4. Project Report :**

(1) A summary of the salient features of the Project.

(2) Status of the organisation (Government, Semi-Government, Public or Private etc.).

(3) Maximum number of persons likely to be working in the factory.

(4) Maximum amount of power and water requirements and source of their supply.

(5) Block diagram of the buildings and installations, in the proposed supply.

(6) Details of housing colony, hospital, school and other infrastructural facilities proposed

**5. Organisation structure of the proposed manufacturing Unit/factory :**

(1) Organisation diagrams of :



(a) Proposed enterprise in general.

(b) Health, safety and environment protection departments and their linkage to operation and technical departments.

(2) Proposed Health and Safety Policy.

(3) Area allocated for treatment of wastes and effluent.

(4) Percentage outlay on safety, health and environment protection measures.

**6. Meteorological data relating to the site :**

(1) Average, minimum and maximum of-

(a) Temperature;

(b) Humidity;

(c) Wind velocities during the previous ten years.

(2) Seasonal variations of wind direction.

(3) Highest water level reached during the floods in the area recorded so far.

(4) Lightning and seismic data of the area.

**7. Communication links :**

(1). Availability of telephone/telex/wireless and other communication facilities for outside communication.

(2). Internal communication facilities proposed.

**8. Manufacturing Process Information :**

(1) Process flow diagram.

(2) Brief write up on process and technology.

(3) Critical process parameters such pressure build-up, temperature rise and run-away reactions.

(4) Other external effects critical to the process having safety implications, such as ingress of moisture or water, contact with incompatible substances, sudden power failure.

(5) Highlights of the built-in safety/pollution control devices or measures/incorporate in the manufacturing technology.

**9. Information of Hazardous Materials :**

(1) Raw materials, intermediates, products and by-products and their quantities (Enclose Material Safety Data Sheet in respect of each hazardous substance).

(2) Main and intermediate storages proposed for raw materials/intermediates/products/by products (maximum quantities to be stored at any time).

(3) Transportation methods to be used for materials inflow and outflow, their quantities and likely routes to be followed.

(4) Safety measures proposed for-

- handling of materials;

- internal and external transportation, and
- disposal (packing forwarding of finished products).

**10. Information on Disposal/Disposal of Wastes and Pollutions :**

- (1) Major pollutions (Gas, liquid, Solid) their characteristics and quantities (average and at peak loads).
- (2) Quality and quantity of solid wastes generated method of their treatment and disposal.
- (3) Air, water and soil pollution problems anticipated and the proposed measures to control the same, including treatment and disposal of effluent.

**11. Process Hazards Information :**

- (1) Enclose a copy of the report on environmental impact assessment.
- (2) Enclose a copy of the report on Risk Assessment study.
- (3) Published (open or classified) reports, if any, on accident situations occupational health hazards or similar plants elsewhere (within or outside the country).

**12. Information of proposed Safety and Occupational Health Measures :**

- (1) Details of fire fighting facilities and minimum quantity of water. CO2 and or other fire fighting measures needed to meet the emergencies.
- (2) Details of in-house medical facilities proposed.

**13. Information on Emergency Preparedness :**

- (1) Onsite emergency plan.
- (2) Proposed arrangements, if any, for mutual aid scheme with the group of neighbouring factories.

**14. Any other relevant information.**

I certify that the information furnished above is correct to the best of my knowledge and nothing of importance has been concealed while furnishing it.

.....

Name and signature of the applicant

**FORM XXXV**

**(See rule-99 (4))**

**Information to be furnished by Occupier of Hazardous process Industry to the Chief Inspector  
Cum Facilitator**

1. Name of Factory .....
2. Address .....
3. Product .....
4. Manufacturing process .....
5. Raw Material .....
- (a) Name & Maximum storage Capacity .....
6. Finished Product
- (a) Name & Maximum storage Capacity
7. Intermediate Products
- (a) Name & Maximum storage Capacity
8. Hazards associated with the Factory
9. Safety Measures observed
10. Fire & Explosion risk
11. Details for disposal of hazardous waste

Signature of Occupier

**Form XXXVI**

(See rule- 54 (3) (ii) & 101 (2))

**Health Register**

**Name of the factory:**

**Address:**

SI. No.	Department works	Name of worker	Sex	Age (at least birthday)	Date of employment on present work	
1	2	3	4	5	6	
Date of leaving or transfer to other work with reasons for discharge or transfer		Nature of job or Occupation	Raw materials products or by-products likely to be exposed to	Date of medical examination and the results thereof		Signs and symptoms observed during examination
7		8	9	10	11	12

Nature of tests and results thereof	If declared unfit for work state period of suspension with reasons in detail	Whether certificate of unfitness issued to the worker	Re-certified fit to resume duty on	Signature of the Medical Officer with date
13	14	15	16	17

**FORM-XXXVII****(See rule-144 (2))**

**The medical examination shall be conducted by a qualified medical practitioner as per following proforma:**

**B. Demographics:**

Question	Answer	Remarks
Date:		
Name of the Worker:		
Age:		
Permanent Address:		
Gender:		
Total Number of family Members:		
Total monthly family Income:		
Is the employee under ESI (Employees' State Insurance) Scheme? If yes, provide IP Number.	Yes/No	
Is the employee under any other health scheme apart from ESI-Scheme? (If yes, provide the name of the scheme)	Yes / No	

**3. Occupational History**

Question	Answer	Remarks
Present Designation:		
Work Profile:		
Duration of service in the present work profile:		
Working Hours per shift:		
Night Shift Per Week:		
Night Shift per Month:		

**C. Brief Review of Medical History: Diagnosed previously or currently under treatment or Currently suffering from**

Question	Answer (Yes/No)	Remarks
Anaemia		
Jaundice		
Asthma		
COPD		
History of Any other Lung Disease: (If Yes, Please Specify)		
Vertigo/Dizziness		
Diabetes Mellitus		
Hypertension		
Any Cancer (If Yes, Please Specify the Cancer)		
Chronic Low Back Pain		
Chronic Pain in hand or Elbow		
Hernia		

Hydrocele		
Varicose Vein		
Haemorrhoids		
History of amputation/fracture/dislocation injury during work (If Yes, please specify)		
Dermatitis (If Yes, specify Site)		
Hearing Impairment		
Visual Impairment		
Any Major Illness requiring hospitalization in last 1 year (If Yes, Name of the Disease)		
Occupational Injury in Last 1 year: if yes Specify the Location of injury and frequency		

## **D. Current Symptoms-DiseasesModule**

Question	Answer (Yes/No)	Remarks
Smoking habit		
Chewing Tobacco or Pan Masala or Gutkha:		
Alcohol Addiction		
Dermatosis (Irritant Contact Dermatitis/Eczema/Chloracne/Allergic Contact Dermatitis):		
Mucosal Irritation of eyes/Nose/Throat with response to chemical agent or biological agent:		
Symptoms like Respiratory Difficulty/ Chest Tightness/ Dry Cough at beginning of shift:		
Currently suffering from TB:		
Jaundice or Hepatitis:		
Currently suffering from Low Back Pain		
Currently suffering from Pain in hand or Elbow:		
Currently suffering from Visual Problems		
Currently suffering from Hearing Problems		
Any current injury (amputation/ fracture/ dislocation)		
Any current musculoskeletal sprains/ strains		

## **E. Physical Examination**

**Date of Examination:**

Question	Answer (Yes/No) or as appropriate	Remarks
General Skin Condition: (If Any Dermatitis, please mention its location)		
Weight (in Kg):		

Height (in Meter)		
Temperature (°F):		
BP:		

Pulse:		
SpO2:		
Respiratory Rate:		
Examination of Breast of female-employee		

**F. Investigation Report**

- **Routine Blood Investigation: Attach the photocopy of the report**
- **Blood Grouping & Rh Typing and HB Electrophoresis Once in a lifetime**

Parameter	Answer (Normal/Increase/Decrease)	Value
Hb%:		
Total WBC Count and Differential Count:		
Platelet Count:		
ESR:		
FBS:		
PPBS:		
HBA1C level		
BUN:		
Creatinine:		
Total Protein		
Albumin		
Globulin		
SGOT		
SGPT		
Bilirubin		
Urine RE		
Urine ME		
Prostate Specific Antigen (PSA)		

**N. Standard Chest X Ray (PA) View: attach  
the photocopy of the report Date:**

Parameter	Answer (Normal/Abnormal)	Value ( if any importance)
Report		

Report:

**O. Spirometry: attach the photocopy of  
the report (For mine employee) Date:**

Parameter	Answer (Normal/Increase/Decrease)	Value
<b>PEFR:</b>		
FEV <sub>1</sub> :		
Observed:		
Predicted:		
FVC:		
Observed:		
Predicted:		
FEV <sub>1</sub> /FVC:		
Final Report: Normal / Obstructive Lung Disease/ Restrictive Lung Disease/ Mixed Lung Diseases		

**P. Audiometry (Pure Tone / BERA): attach the photocopy of the report (For Mine Employee) Date:**

Parameter	Value/Result/Interpretation
Visual inspection of Eye for any abnormality like wax in external ear, infection etc	
Right Ear Hearing Threshold:	
Left Ear Hearing Threshold:	
Final Report preferable based on BERA:	
Right Ear:	
Left Ear:	

**Q. Eye Examination: attach the photocopy of the report Date:**

Parameter	Value/Result/Interpretation
Visual inspection of Eye for any abnormality like corneal opacity/scarring, cataract etc.	
Visual Acuity: Right	
Visual Acuity: Left	
Colour Vision	
Field of Vision	
Binocularity	
Lateral Phoria	
Vertical Phoria	
Stereoscopic Vision and Depth Perception Testing	
Fundus (Retina) examination	



**R. 12 lead ECG and Echocardiography:**

Final Report:

**S.MEDICAL FITNESS TESTS FOR PERSONS WORKING AT HEIGHT (*as may be applicable*):**

3. Detailed Medical History and in-Depth General Medical Examination including tests for Vision, Hearing, Musculoskeletal System, Respiratory System, Cardiovascular System etc.

As applicable to all employees

4. Special Examination

f) Cardiovascular

Uncontrolled hypertension or ischemic heart disease will be a contraindication. In the presence of hypertension and abnormal ECG findings, the employee should be referred to a Cardiologist for fitness.

g) Tests for Labyrinthine functions and for sense of position Eye Examination for Bilateral Nystagmus, Romberg sign. The presence of bilateral nystagmus and a positive Romberg sign will be an absolute contra-indication.

h) Neurological examination Evaluate seizure disorders: CT Scan of Brain and E.E.G if indicated

i) Assessment of Diabetic Control Status:

(in case of employees suffering from Diabetes Mellitus)

j) Assessment of Phobia (Acrophobia) and any other Mental Health Disorder like Anxiety or Depression

d) Evaluation for Vertigo and Dizziness

**For use of Industrial Safety Section:**

Walking freely over a horizontal bar  
at 1 ft. height: PASS / FAIL Wearing  
a safety belt and tying the rope  
knot: PASS/ FAIL

Walking over a horizontal structure at 9 ft. height  
wearing a belt: PASS/ FAIL General physique  
(O.K./NOT O.K): PASS/ FAIL

**T. Any other information/examination/biological investigation/test as mutually agreed by the employer and qualified medical practitioner.**

**FORM-XXXVIII**  
**(See rule 149 (1) (a))**

**[COMPLAINT UNDER SUB-SECTION (1) OF SECTION 111]**

**BEFORE THE AUTHORITY APPOINTED UNDER SUB SECTION (1) OF SECTION 111  
OF THE OCCUPATIONAL SAFETY HEALTH AND WORKING CONDITIONS CODE 2020.**

FOR..... AREA.....

Application No.....of 20.....

Applicant / Petitioner	V/s	Respondent
Representing State of Karnataka Inspector - cum- Facilitator		

Complaint under sub section (1) of Section 111 r/w 141 of THE OCCUPATIONAL  
SAFETY HEALTH AND WORKING CONDITIONS CODE 2020,

1. The Petitioner is appointed for the enforcement of THE OCCUPATIONAL SAFETY HEALTH AND WORKING CONDITIONS CODE 2020 Of section 111(1) under Government Notification \_\_\_\_\_ from \_\_\_\_\_ as Inspector - cum- Facilitator.
2. The above respondent \_\_\_\_\_ comes under the definition of Employer under Section-2(u) of the occupational safety health and working conditions code 2020. The respondent having company/ Factory / construction work in the name of M/s \_\_\_\_\_ this comes under the definition of establishment under section-2(5) of the said code.
3. The Petitioner inspected the respondent establishment where \_\_\_\_\_ number of workers are working and detected various violations under the occupational safety health and working conditions code 2020 and served notes of inspection to the employer directing him to rectify the violations and to submit written compliance report.
4. The respondent has failed to rectify violations and to submit written compliance report along with the documents to the office of the petitioner hence show cause notice has been served to the respondent on \_\_\_\_\_ even then respondent has continued the violations without following the direction of the petitioner and violated following sections of the occupational safety health and working conditions code 2020.

**Violations**

- 1.
- 2.
- 3.
- 4.
- 5.

**FORM-XXXIX**  
**[See rule 149 (2)]**  
**APPEAL UNDER SECTION 111(3) of THE OCCUPATIONAL SAFETY HEALTH AND**  
**WORKING CONDITIONS CODE 2020.**

Address.....

APPELLANT

Vs.

C.D.E.

Address.....

RESPONDENT

DETAILS OF APPEAL:

1. Particulars of the order against which the appeal is made :

Number and date:

The authority who has passed the impugned order:

Amount awarded:

Compensation awarded, if any:

2. Facts of the case:

(Give here a concise statement of facts in a chronological order, each paragraph containing as nearly as possible a separate issue or fact).

3. Grounds for appeal:

4. Matters not previously filed or pending with any other Court or any Appellate Authority:

5. The appellant further declares that he had not previously filed any appeal, writ petition or suit regarding the matter in respect of which this appeal has been made, before any Court or any other Authority or Appellate Authority nor any such appeal, writ petition or suit is pending before any of them.

6. Reliefs sought:

In view of the facts mentioned above the appellant prays for the following relief(s):—

[Specify below the relief (s) sought]

7. List of enclosures:

- 1.
- 2.
- 3.
- 4.

Date :

Place :

Signature of the Appellant

For office use

Date of filing

Or

Date of receipt by post

Registration No.

**FORM-XL**

**(See rule-150 (1))**

**APPLICATION UNDER SUB SECTION (1) OF SECTION 114 FOR COMPOUNDING OF OFFENCE**

1. Name of applicant (name of the employer who committed the offence under the occupational safety health and working conditions code, 2020 to be mentioned \_\_\_\_\_)
2. Address of the applicant \_\_\_\_\_
3. Particulars of the offence \_\_\_\_\_
4. Section of the Code under which the offence has been committed \_\_\_\_\_
5. Details of the compounding amount deposited (electronically generated receipt to be attached) \_\_\_\_\_
6. Details of the prosecution, if filed for the violation of above mentioned offences may be given \_\_\_\_\_
7. Whether the offence is first offence or the applicant had committed any other offence prior to this offence, if committed, then, full details of the offence \_\_\_\_\_
8. Any other information which the applicant desires to provide \_\_\_\_\_

Applicant  
(Name and Signature)

Dated  
Place:

**FORM-XLI**

**Composition Certificate**

**[See rule 150 (4)]**

Ref: Notice No. \_\_\_\_\_

Date:

This is to certify that the offence under sub-section ... of section 114 of the Code in respect of which Notice No. Dated: \_\_\_\_\_ was issued to Sh..... (Applicant), the employer of ..... (name and Registration Number of establishment) has been compounded on account of remission of full amount of full amount of Rs..... ( Rupees ..... ) towards the composition of offences to the satisfaction of the said Notice.

(Signature)

Name and Designation of the  
Officer

Date:

Place:

**FORM-XLII**

(see rule 151(3) and (5))

**APPLICATION FOR LICENSE/COMMON LICENSE**

Online Application for License/ Renewal of License / Amendment of License (including Common license)							
ESTABLISHMENT PROFILE:							
Labour Identification Number Date							
Acknowledgement Number: ..... Date of Application:.....							
<b>I. Particulars of Establishment for which license required:</b>							
1. Name of Establishment:							
2. Address of establishment:							
(a) Head Office address along with email Id :							
(b) Corporate office address along with email Id:							
3. Telephone Number / Mobile Number :							
4. Activity as per National Industrial Classification : (Select all applicable activities given)							
5. Details of selected NIC Code:							
6. Nature of work carried on in main establishment :							
7. Identifier of the Establishment : (Select) : e-sign / digital sign							
<b>II. Details of Employer:</b>							
1. Full Name of Employer: ..... relationship with establishment.							
2. Full Address of Employer:							
3. Email Id of employer:							
4. Mobile No. of employer:							
**Details of all occupier/partners/directors to be furnished alongwith							
<b>III. Particulars of the Contract Labour to be employed / is employed (If licence is required workwise)</b>							
Location s of worksite s	Name of work s	Activity as per national industria l classifica tion	Date of commen cement	Date of completion	Name of Establishment s in which contract Labour is/proposed to be employed	Name Address , email id of the Site Incharge	Registrat ion number, if obtained, then details thereof
1	2	3	4	5	6	7	8
Name, Residential address and mobile no. of manager							
5. Maximum number of workmen proposed to be employed on the Establishment on any date:							
6. Amount of License Fee: INR (Transaction Id :)							
7. Amount of Security Deposit: INR (Transaction Id :)							
<b>IV. DETAILS OF ESTABLISHMENTS FOR WHICH COMMON LICENCE REQUIRED , (IF APPLYING FOR)</b>							

1. Full name of the industrial premises:-

2. (i) Full postal address and situation of the industrial premises :- (ii) Full address to which communications relating to the Industrial premises  
3. Maximum number of employees Proposed to be employed on any one Day during the financial year commencing on -----  
-----:-

4. Full name and residential address of the Person who shall be the employer for the purposes of the Act. :-

5. If the employer is a company within the meaning of the Explanation to section 109, state the full name of the Director, Partner or the person in charge of and Responsible to the Company. (See Note 1 at the end)

6. Financial resources of the employer e.g. Particulars and value of movable and Immovable properties, bank reference Income tax assessment.

7. Whether the employer is a trade mark Holder registered under the Trade and Merchandise Marks Act, 1958

8. Value of beedies or cigars or both Manufactured at the industrial premises, during the preceding financial year ending on -----

9. Previous experience of the applicant in the industry

10. Whether the proposed site of the In industrial premises amounts to the Alteration of the site, of any, existing Industrial premises and, if so, the Reasons for such alteration.

11. Whether any industrial premises was Closed by the applicant during the Period of twelve months immediately Preceding the date of the application And, if, so, the reasons therefor.

12. Source of obtaining tobacco

13. Whether the beedis or cigars or both Manufactured by the applicant will be Sold and marked by himself or through a proprietor or a registered user of a trade Mark registered under the Trade and Merchandise Marks Act, 1958, or any other person.

14. Whether the plans of the premises are enclosed.

The application for licence may however be made either by the contractor or the employer.

Note 1 : Where an industrial premises is run or proposed to be run by a contractor for or on behalf of another person including a company aforesaid the said other person or company is under the Act the employer and particulars to be entered for Employer in the Form should be in regard to such person. Note 2: If any person named against item 5 is a minor, the fact shall be stated clearly.

Type of Establishments	Name & Address of establishment	(i) Nature of work carried out in the establishment (ii) Activity as per National Ind'l classification	Date of commencement	Permanent establishment or probable date of completion	Maximum number of employees employed / proposed to be employed	Maximum number of employees employed / proposed to be employed	Registration number if obtained then details thereof
1	2	3	4	5	6	7	8

<b>Signature of Employer/Contractor</b>
<b>(e Sign/DSC)</b>
Note: This is an online application summary applied on Maha-Online Portal.
<b>APPLICATION FOR RENEWAL OF LICENCE:</b>





**FORM-XLIII**

**(See rule 152 (2))**

**APPEAL**

To :

The Appellate Authority

---

1. Name and Address of Establishment:-
2. Order of the Registering Officer rejecting the registration :
3. Brief description of the dispute :
4. Documents relied in favour of registration :
5. Grounds of the appeal :
6. Any other relevant information :

Name and Signature of the Appellant :

**SCHEDULE-A**

**(See rule 44, 45 (1) & (2))**

The applicant, for being recognized as Safety Auditor, shall possess the following qualifications and experience, etc.:-

**1. Academic Qualification and Experience.-** (1)The applicant shall hold, -

- (i) degree in branch of Chemical, Mechanical, Electrical or Production or Industrial Engineering and Management Engineering from recognized University, and having ten years of experience in the field of manufacturing, maintenance, design, project or safety in the capacity of supervisor or above in factories; or
  - (ii) diploma in branch of Chemical, Mechanical, Electrical, Production from recognized institution, and having fifteen years of experience in the field of manufacturing, maintenance, design, project or safety, in the capacity of supervisor or above in factories; or
  - (iii) degree in Bachelor of Science with Physics and Chemistry, and having twenty years experience in the field of manufacturing, maintenance or safety of any registered factory in the capacity of supervisor or above
- and
- (iv) full time Degree or Diploma in Industrial Safety recognized by the Board of Technical Education or All India Council of Technical Education or recognized University or Regional Labour institute or Central Labour Institute; or
  - (v) Degree in any branch of Engineering and having fifteen years of experience in Factory Inspectorate or Directorate of Industrial Safety and Health or in DGFASLI or Regional

Labour Institute and in the capacity of Deputy Director or above at the time of relinquishing the office.

2. The applicant shall not be directly or indirectly involved in the factory or in any process or business carried on therein or in any patent or machine connected therewith, in respect of which the safety audit is to be conducted.

3. If the age of applicant is more than 60 years, he shall submit a certificate of physical fitness issued by District surgeon along with the application for recognition or renewal of recognition. Age of applicant limited to 70 years.

## **SCHEDULE-B**

**(See rule 45 (5) & 46 (1))**

### **Application form for recognition or renewal of recognition of Safety Auditor**

(to be filled in by individuals)(In Duplicate)

1. Name :

2. Father/Husband Name :

3. Date of Birth and Age :

4. Permanent Address :

5. Address for :

Correspondence

Telephone No. :

Mobile No. :

Fax :

E-mail :

6. Educational Qualification : (Attach Certified copies)

Sr. No/ Degree/Diploma College/Institution/University Year of completion

Applicant's Latest Photograph signed across.

7. Technical Qualification in Safety (Attach certified copies)

Sr. No/ Degree/Diploma College/Institution/University Year of completion

8. Work Experience (Attach certified copies)

Sr. No/ Employment Date/ Name and address of Employer /Designation/ Nature of work/From -To

9. For renewal of recognition.-Certificate No. and date:

10. DECLARATION

I hereby declared that,

a) my recognition as a Safety Auditor was not revoked or cancelled by the State Government in the past;

b) my recognition as a Safety Auditor was revoked or cancelled in the past, and its details are as follows :-Date of revocation or cancellation and its order number, if any Period

From- To

Note.- If the recognition was cancelled or revoked twice in the past, the Safety Auditor is not eligible for recognition.

c) I have carried out three or more than three, Safety Audits in the past two years, the list showing the name, address of the factory and

date of audits are attached herewith.

d) I, ----- hereby declare that the information furnished above are correct to the best of my knowledge. I

Undertake to:

(i) Maintain the facilities in good working order, and

(ii) Fulfill and abide by the conditions, if any, stipulated in the certificate of recognition.

Signature of the Applicant:

Full Name:

Date:

Place:

### **SCHEDULE-C**

**(See rule 46(1))**

#### **Form of Application for recognition or renewal of recognition to an institution as Safety Auditor**

1. Name and full address of the Institution:

2. Institution status (specify whether Government, autonomous, co-operative, corporate or private)with registration number:

3. a) Name of head of Institution

b) Phone/Mobile No.

c) E-Mail address

d) Fax

4. Whether the Institution has been declared as a Safety Auditor by this State or any other State? If so, give details.

5. Attach bio-data of atleast three employed persons, in the Annexure attached to this application :

6. Any other relevant information

7. Certificate No. (in case of renewal)

8. DECLARATION

I hereby declare that,-

(a) Recognition of the institution as Safety Auditor was not revoked or cancelled by the State Government in the past;

(b) the recognition of the institution as Safety Auditor was revoked or cancelled in the past, its details are as follows :-

Date of revocation or cancellation and its order number, if any Period From To

Note.- If the recognition was cancelled or revoked twice in the past, the institution is not eligible for recognition.

(c) The institution has carried out three or more than three Safety Audits in the past two years, the list showing the name, address of the

factory and date of audits are attached herewith.

(d) I, hereby declare that the persons whose bio-data it attached to the application are the employees of the institution whose copies of

appointment letters are attached herewith.

(e) I, ----- hereby declare that the information furnished above for ----- (name of the

institution) is correct to the best of my knowledge. I undertake to,-(i) notify to the Chief Inspector Cum Facilitator immediately, in case the employed person on the basis of which this recognition was procured

when leaves the employment,

(ii) Maintain the facilities in good working order,

(iii) fulfill and abide by all the conditions stipulated in the certificate of recognition.

Signature of the Head of the Institution:-----Designation:-----  
-----Place:-----Date:-----Annexure to Form -  
B

Personal Information of the persons employed:

1. Name :

2. Father/Husband Name :

3. Date of Birth and Age :

4. Permanent Address :

5. Address for :

Correspondence

Telephone No. :

Mobile No. :

Fax :

E-mail :

6. Educational Qualification: (Attach Certified copies)

Sr.No/ Degree/Diploma College/Institution/University Year of completion

Latest Photograph signed across.

7. Technical Qualification in Safety (Attach certified copies)

Sr.No/ Degree/Diploma College/Institution/University /Year of completion

8. Work Experience (Attach certified copies)

Sr.No/ Employment Date Name and address

of Employer

Designation/ Nature of

Work, From----- To-----DECLARATION

I hereby declare that all information provided in this annexure is true and correct to the best of my knowledge. If recognized, I

agree to abide by and uphold the high standard of professional ethics in discharge of my duties as a Safety Auditor.

Signature of the Applicant :

Full Name :

Date :

Place

#### **SCHEDULE-D**

**(See rule 46 (2) (b))**

#### **Certificate of recognition / renewal of recognition as a Safety Auditor.**

CERTIFICATE NO. : MS/DISH/SA/...../20.....

It is to inform that M/S. / SHRI / SMT. ...., (address)

.....,has been Recognized / Renewed the recognition as a "SAFETY AUDITOR", by the Chief Inspector Cum Facilitator, vide letter No. .... dated..... for the purpose of carrying out Safety Audit under Occupational Safety, Health and Working Conditions (Karnataka) Rules, 2021.

The Certificate is valid from ..... to .....

This certificate is issued subject to the conditions stipulated hereunder:-1. Safety audit shall be carried out in accordance with the provisions of Occupational Safety, Health and Working Conditions (Karnataka) Rules, 2021.

2. Every safety audit shall conform to the IS 14489:1998 or latest relevant standard.

3. He or the person authorized, in case of the institution, to carry out safety audit shall be physically present at the time of conducting the Safety Audit and shall maintain the record of the work done in the Log Book.

4. Certificate No. and validity period should invariably be recorded on Safety Audit Report,

5. No safety audit shall be carried out after expiry of validity period.

6. The Chief Inspector Cum Facilitator reserves the right to revoke, annul or amend this Certificate at any time during its validity,

7. He or the person authorized, in case of the institution, to carry out safety audit shall not conduct a Safety Audit of any factory where such auditor is employed, or an occupier, partner, director or manager of that factory, or of any factory owned, operated, managed or conducted by immediate family members, relatives or extended family members or wherein that auditor or such person shall not carry out a safety audit of those factories to which that auditor supplies any plant, machinery, raw material, safety equipments or other materials, equipment.

8. He or the person authorized, in case of the institution, to carry out safety audit shall not disclose, even after ceasing to be a recognized Safety Auditor of the employee of the institution, any manufacturing or commercial secrets or working processes or other confidential information which may come to his knowledge in the course of their duties as an auditor. Any failure in this regard may make such auditor or person liable for criminal or civil Proceedings, in accordance with the law for the time being in force.

9. The application for renewal of the recognition as a Safety Auditor shall be made atleast three months before the expiry of the period of recognition.

Signature of the issuing Authority.

#### **SCHEDULE-E**

**(See rule 47A & 48)**

#### **PROFORMA FOR SAFETY AUDIT REPORT**

1. Name and address of the factory,

2. Name of the Occupier,

3. Date of Audit,

4. List of raw material with maximum storage quantity,

5. List of finished products with maximum storage quantity,

6. Manufacturing process flow chart,

7. P I Diagram of all plants (Chemical Factories),

8. Name of the Safety Auditor and Certificate No. and name of the person who has carried out safety audit,

9. Whether enclosed Safety Audit Report as per IS 14489, or any such standards prevailing at the relevant time, whichever is latest:

Date: Signature of Safety Auditor/Person or employee of an Institution authorized to carry out safety audit

I hereby undertake to submit the action taken report on

Recommendations of Safety Audit on or before .....

Date:  
or Auditor.

Signature of the Occupier or Manager

#### **Schedule-F**

**(See rule 51(1))**

Sl. No	Equipment to which competency is recognised.	Qualification Required	Experience for the purpose	Facilities at his command
1	"Dangerous Machines"	Degree in electrical or mechanical or textile engineering or Its equivalent Qualification	(i) A minimum of 7 years of experience In:- (a) design or operation or maintenance; or (b) testing examination and inspection of relevant machinery, their guards, safety devices and appliances. (ii) He shall:- (a) be conversant with safety devices and their proper functioning; (b) be able to identify defects and any other causes leading to failure; and (c) have ability to arrive at a reliable conclusion with regard to the proper functioning of safety devices, appliances and machine guards.	Gauges for measurement; Instruments for Measurements of speed and any other equipment or device to determine the safety in the use of the dangerous machines.
2	Lifts and Hoists	A degree in Mechanical or Electrical Engineering or its equivalent.	(i) A minimum experience of 7 years in:- (a) design or erection or Maintenance; or Inspection and test 3 procedures; of lifts and hoists; (II) He shall be:- (a) Conversant with current relevant codes of	Facilities for load testing, tensile testing, Gauges, equipments / gadgets for measurements and any other equipment required for

			practices and test procedures in force; (b) Conversant with other statutory requirements covering the safety of the Hoists and Lifts. (c) Able to identify defects and arrive at a reliable conclusion with regard to the safety of Hoists and Lifts.	determining the safe working conditions of Hoists and Lifts.
3	Lifting Machinery and lifting tackles.	Degree in mechanical or electrical or metallurgical engineering or its equivalent	(1) A minimum experience of 7 years In:- (a) design or erection or maintenance, or testing, examination and Inspection of lifting machinery, chains, ropes and lifting tackles. (ii) He shall be (a) conversant with current relevant codes of practices and test procedures in force; (b) conversant with fracture mechanics and metallurgy of the material of construction; (c) conversant with, heat treatment/stress relieving techniques as applicable to stress bearing components and parts of lifting machinery and lifting tackles (d) capable of Identifying defects and arriving at a reliable conclusion with regard to the safety of lifting machinery, chains, ropes and lifting tackles.	Facilities for load testing, tensile testing, heat treatment, equipment/gadget for measurement gauges and such other equipment to determine the safe working conditions of the lifting machinery tackles.
4	Pressure Plant	Degree In chemical or electrical or metallurgical or mechanical engineering or Its equivalent.	(i) A Minimum experience of 10 years In:- (a) design or erection or maintenance; or testing, examination and Inspection of pressure plants. (ii) He shall be:- (a) conversant with the relevant codes of practices and test procedures in force relating to the pressure vessels;	Faculties for carrying out hydraulic test nondestructive test, gauge equipment/gadgets for measurement and any other equipment or gauges to determine the safety In the use of



			<p>(b) conversant with statutory requirements concerning the safety of unfired pressure vessels and equipment operating under pressure:</p> <p>(c) conversant with nondestructive testing techniques as are applicable to pressure vessels:</p> <p>(d) able to identify defects and arrive at a reliable conclusion with regard to the safety of pressure plants.</p>	pressure vessels:
5	Precautions against dangerous fumes and confined spaces	Master's Degree In Chemistry or a Degree/ diploma In Chemical/ Mechanical/ Electrical Engineering.	<p>(i) A minimum experience of 7 years in collection and analysis of environmental samples and calibration of monitoring equipment;</p> <p>(ii) He shall:-</p> <p>(a) be conversant with the hazardous properties of chemicals and their permissible limit values;</p> <p>(b) be conversant with the current techniques of sampling, and analysis of the environmental contaminants; and</p> <p>(c) be able to arrive at a reliable conclusion as regard the safety in respect of entering and carrying out hot work.</p>	Meters, Instruments and devices duly celebrated and Certified for carrying out the tests and certification of safety in working in confined spaces.
6	<p>Ventilation system:-</p> <p>(i) grinding or glazing of metals and processes incidental thereto.</p> <p>(ii) cleaning or smoothening, roughening etc. of articles, by a metal shot or grit or other abrasive propelled by a blast of compressed air or</p>	Degree in mechanical or chemical or electrical or Civil or its equivalent	<p>(i) A minimum experience of 7 years in design, fabrication, installation, Engineering or testing of ventilation system and equivalent. systems used for extraction and collection of dusts, fumes and vapors and connected ancillary equipments,</p> <p>(ii) He shall be conversant with current relevant codes of practice and test procedures in respect of ventilation and extraction system for fumes and</p>	Facilities for testing the ventilation system instruments and gauges for testing the effectiveness of the extraction systems for dusts, vapours and fumes, and any other equipment needs for determining the efficiency and adequacy of

steam. (iii) handling and Processing of asbestos (iv) manufacture of Rayon by Viscose process. (v) foundry operations (vi) chemical works (vii) mechanical ventilation in factories (viii) any other ventilation system prescribed under the code and rules		shall be able to arrive at a reliable conclusion with regard to effectiveness of the system. conclusion as to the adequacy of the system.	these systems. He shall have the assistance of suitable qualified technical persons who can come to a reasonable conclusion as to the adequacy of the system.
---	--	---	---

### Schedule-G

(See rule 51 (3) and (4))

#### FORM OF APPLICATION FOR GRANT OF CERTIFICATE OF COMPETENCY TO A PERSON

1. Name :
2. Date of Birth :
3. Designation :
4. Education Qualifications :  
(Copies of testimonials to be attached)
5. Details of Professional experience :  
(in chronological order)

Period of Service	Designation	Area of Responsibility

6. Membership, if any, of Professional bodies :
7. (a) Details of Facilities :  
(Examination, testing, etc.,)  
at his disposal
- (b) Arrangement for Calibrating and :  
maintaining the accuracy of these facilities.
8. Purpose for which competency certificate is sought (Specify Sections or Section of the Act) :
9. Whether the applicant has been declared :  
as a competent person under any other statute. ( If so, furnish details)

10. Any other relevant information :  
 11. Declaration by the applicant :

I, . . . . ., hereby declare that the information furnished above, is true, I undertake :

- a) that in the event of any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organization, I will promptly inform The Director of Factories, Boilers, Industrial Safety and Health;
- b) to maintain the facilities in good working order, calibrated periodically as per manufacturers instructions or as per National Standards ; and
- c) to fulfill and abide by all the conditions stipulated in the Certificate of Competency and instructions issued by The Director of Factories, Boilers, Industrial Safety and Health from time to time.

Place :

Date : SIGNATURE OF THE APPLICANT

(NAME IN BLOCK LETTERS)

#### **Schedule-H**

**(See rule 51 (3) & (4))**

#### **FORM OF APPLICATION FOR GRANT OF CERTIFICATE OF COMPETENCY TO AN INSTITUTION**

1. Name and full address of the Institution :
2. Institutions status :  
 (Specify whether Government, Autonomous, Co-operative, Corporate, Private, etc.,)
3. Purpose for which Competency Certificate is sought (Specify Section(s) of the Act) :
4. Whether the Institution has been declared as a competent person under this or any other statute. If so, give details :
5. Particulars of persons employed and possessing qualification & experience :

Sl. No.	Name & Designation	Qualification	Experience	Section(s) and the rules under which competency is sought for

1.				
2.				

**6.** Details of facilities (relevant to item 3 above) and arrangements made for their maintenance and calibration periodically :

**7.** Any other Relevant information

**8.** Declaration

I, ..... hereby, on behalf of ..... , Certify the details furnished above, are correct to the best of my knowledge. I undertake to :

- a) maintain the facilities in good working order, calibrated periodically as per manufactures instructions or as per National Standards ; and
- b) fulfill and abide by all conditions stipulated in the Certificates of competency and instructions issued by the Director of Factories, Boilers, Industrial Safety and Health from time to time

SIGNATURE OF HEAD OF THE INSTITUTION OR OF THE  
PERSONS AUTHORISED TO SIGN ON HIS BEHALF.

DESIGNATION :

Date :

Place :

### **Schedule-I**

**(See rule 51 (3))**

### **FORM OF CERTIFICATE OF COMPETENCY ISSUED TO A PERSON OR AN INSTITUTION**

I, ..... in exercise of the powers conferred on me under Section 2 (l) of the occupational Safety, Health and Working Conditions Code, 2020.and the rules made thereunder, hereby recognize ..... (Name of the employed in Institution) or Shri ..... (Name of the person) (Name of the Organization) to be a competent person for the purpose of carrying out tests, examinations, inspections and certification for such buildings, dangerous machinery, lifts and hoists, lifting machines and lifting tackles, pressure plants, confined space, ventilation system and process or plant and equipment as the case may be, used in a factory located in. ....  
.... \* under section ..... and the rules made there under.

\*Strike out the words not applicable.

This certificate is valid from . . . . . to . . . . .

This certificate is issued subject to the conditions stipulated hereunder :-

- (i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act and the Rules made there under ;
- (ii) Tests, examinations and inspections shall be carried out under direct supervision of the competent person or by a person so authorized by an institution recognized to be a competent person ;
- (iii) The Certificate of Competency issued in favour of a person shall stand cancelled if the person leaves the organization mentioned in his application ;
- (iv) The institution recognized as competent person shall keep the Director of Factories, Boilers, Industrial Safety and Health informed of the names, designations and qualifications of the persons or the persons authorized by it, to carry out tests, examinations and inspections.
- (v) . . . . .
- (vi) . . . . .

Date :

Signature of the issuing Authority.

Place :

#### **Schedule-J**

**(See rule 52(1))**

Sl. No	Description	Qualification Required	Experience for the purpose
1	Certificate of stability for buildings and structures.	Masters/ Degree in civil or Structural Engineering or Equivalent	(i) A minimum of 10 years of experience in the design or construction or testing or repairs of structures; (ii) Knowledge of non-destructive testing under various codes of practices that are currently in force and the effect of the vibrations and natural forces on the stability of the building and (iii) Ability to arrive at a reliable conclusion with regard to the safety of the structure of the building.

#### **Schedule-K**

**(See rule 52 (3) & (4))**

#### **FORM OF APPLICATION FOR GRANT OF CERTIFICATE OF COMPETENCY TO A PERSON COMPETENT TO ISSUE STABILITY CERTIFICATE**

- 1. Name :
- 2. Date of Birth :
- 3. Father's Name

4. Identity/Address proof(for competent person also)
5. Education Qualifications :  
(Copies of testimonials to be attached)
6. Details of Professional experience :  
(in chronological order)

Period of Service	Designation	Area of Responsibility

7. Membership, if any, of Professional bodies :

8. (a) Details of Facilities :  
(Examination, testing, etc.,)  
at his disposal

- (b) Arrangement for Calibrating and :  
maintaining the accuracy of these  
facilities.

9. Purpose for which competency certificate  
is sought (Specify Sections or  
Section of the Act) :

10. Whether the applicant has been declared :  
as a competent person under any other  
statute. ( If so, furnish details)

11. Any other relevant information :

12. Declaration by the applicant :

I, ....., hereby declare that  
the information furnished above, is true, I undertake :

- a) that in the event of any change in the facilities at my disposal (either addition or deletion) or my leaving the aforesaid organization, I will promptly inform The Director of Factories, Boilers, Industrial Safety and Health;
- b) to maintain the facilities in good working order, calibrated periodically as per manufacturers instructions or as per National Standards ; and
- c) to fulfill and abide by all the conditions stipulated in the Certificate of Competency and instructions issued by The Director of Factories, Boilers, Industrial Safety and Health from time to time.

Place :

Date : SIGNATURE OF THE APPLICANT

( NAME IN BLOCK LETTERS)

**Schedule-L**

**(See rule 52 (3) & (4))**

**FORM OF APPLICATION FOR GRANT OF CERTIFICATE OF COMPETENCY TO AN  
INSTITUTION AS COMPETENT TO ISSUE STABILITY CERTIFICATE**

1. Name and full address of the Institution :
2. GST Registration Details
3. Whether the Institution has been declared :  
as a competent person under this or any

other statute. If so, give details

4. Particulars of persons employed and  
possessing qualification & experience :

Sl. No.	Name & Designation	Qualification	Experience	Section(s) and the rules under which competency is sought for
1.				
2.				

5. Details of facilities (relevant to item 3 above) and  
arrangements made for their maintenance and  
calibration periodically :

6. Any other Relevant information

7. Declaration

I, ..... hereby, on behalf of ....., Certify  
the details furnished above, are correct to the best of my knowledge. I undertake to :

- a) maintain the facilities in good working order, calibrated periodically as per  
manufactures instructions or as per National Standards ; and
- b) fulfill and abide by all conditions stipulated in the Certificates of competency and  
instructions issued by the Director of Factories, Boilers, Industrial Safety and  
Health from time to time

SIGNATURE OF HEAD OF THE INSTITUTION OR OF THE  
PERSONS AUTHORISED TO SIGN ON HIS BEHALF.

DESIGNATION :

Date :

Place :

**Schedule-M**

**(See rule 52(3))**

**FORM OF CERTIFICATE OF COMPETENCY ISSUED TO A PERSON/ Institution  
competent to issue Stability Certificate**

I, ..... in exercise of the powers conferred on me under Section 2  
(l) of the occupational Safety, Health and Working Conditions Code, 2020 and the rules  
made there under, hereby recognize ..... (Name of the employed in  
Institution) or Shri ..... (Name of the person)  
(Name of the Organization) to be a competent person for the purpose of carrying out tests,  
examinations, inspections and certification for such buildings, and process or plant and  
equipment as the case may be, used in a factory located in. ....  
\* under section ..... and the rules made there under.

---

\*Strike out the words not applicable.

This certificate is valid from ..... to .....

This certificate is issued subject to the conditions stipulated hereunder :-

- (i) Tests, examinations and inspections shall be carried out in accordance with the provisions of the Act and the Rules made there under ;
- (ii) Tests, examinations and inspections shall be carried out under direct supervision of the competent person or by a person so authorized by an institution recognized to be a competent person ;
- (iii) The Certificate of Competency issued in favour of a person shall stand cancelled if the person leaves the organization mentioned in his application ;
- (iv) The institution recognized as competent person shall keep the Director of Factories, Boilers, Industrial Safety and Health informed of the names, designations and qualifications of the persons or the persons authorized by it, to carry out tests, examinations and inspections.
- (v) .....
- (vi) .....

Date :

Signature of the issuing Authority.

Place :



## **SCHEDULE-N**

**(See rule 96 (2) & (4))**

### **MANUFACTURE OF AERATED WATERS AND OTHER BOTTLING PROCESSES**

#### **1. Fencing of machines**

All machines for filling bottles or syphons shall be so constructed, placed or fenced as to prevent at far as may be practicable, a fragment of a bursting bottle or syphon from striking any person employed in the factory.

#### **2. Face-guards and gauntlets**

- (1) The occupier shall provide and maintain in good condition for the use of all persons engaged in filling bottles or syphons
  - a. suitable face-guards to protect the face, neck and throat, and
  - b. suitable gauntlets for both arms to protect the whole hands and arms :

Provided that --

- (i) paragraph 2 (1) shall not apply where bottles are filled by means of an automatic machine so constructed that no fragment of a bursting bottle can escape, and
  - (ii) where a machine is so constructed that only one arm of the bottle at work upon it is exposed to danger, a gauntlet
- (2) The occupier shall provide and maintain in good condition for the use of all persons engaged in corking, crowning, screwing, wiring, foiling, capsuling, sighting handling or labeling bottles or syphons—
  - a. suitable face-guards to protect the face, neck and throat, and
  - b. suitable gauntlets for both arms to protect the arm and atleast half of the palm and the space between the thumb and forefinger.
- (3) Wearing of face-guards and gauntlets

All persons engaged in any of the processes specified in paragraph (2) shall, while at work in such processes, wear the faceguards and gauntlets provided under the provisions of the said paragraph.

## **SCHEDULE-O**

**(See rule 96 (2) & (4))**

### **PHOSPHATING, ELECTROLYTIC PLATING OR OXIDATION OF METAL ARTICLES BY USE OF AN ELECTROLYTE CONTAINING ACIDS, BASES OR SALTS OF METALS SUCH AS CHROMIUM, NICKEL, CADMIUM, ZINC, COPPER, SILVER, GOLD ETC.**

#### **1. Application**

The provisions of this schedule shall apply to all factories in which phosphating, Electrolytic plating or oxidation of metal articles is carried on.

#### **2. Definitions**

For the purposes of this schedule

- (a) "electrolytic process" means the electrolytic plating or oxidation of metal articles by the use of an electrolyte containing acids, bases or salts of metals such as chromium, nickel, cadmium, zinc, copper, silver, gold, etc.
- (b) "Phosphating process" means a chemical process for the surface treatment wherein soluble metal phosphate layers are formed.
- (c) "bath" means any vessel used for an electrolytic process or for any subsequent process.

#### **3. Exhaust draught**

An efficient exhaust draught shall be provided by mechanical means and shall operate on the vapour or spray given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the vapour or spray entering into any room or place in which work is carried on.

#### **4. Floor or workrooms**

The floor of every workroom containing a bath shall be impervious to water. The floor shall be maintained in good and level condition and shall be washed down atleast once a day.

#### **5. Protective devices**

- (1) The occupier shall provide and maintain in good and clean condition the following articles of protective devices for the use of all persons employed on any process and such devices shall be worn by the persons concerned.
  - a. water proof aprons and bibs;
  - b. for persons actually working at a bath, loose- fitting rubber gloves and rubber boots or other waterproof footwear, and chemical goggles; and
  - c. suitable and efficient respirator.
- (2) The occupier shall provide and maintain for the use of all persons employed suitable accommodation for the storage and drying of protective devices.

#### **6. Water facilities**

- (1) There shall be provided and maintained in good repairs for the use of all persons employed in electrolytic process and processes incidental to it
  - (a) a wash place under cover, with either
    - (i) a trough with a smooth impervious surface fitted with a waste pipe, and of sufficient length to allow atleast 60 cms. for every 5 persons employed at any one time, and having a constant supply of water from taps or jets above the trough intervals of not more than 60 cms; or

- (ii) at least one wash basin for every five such persons employed at any one time, fitted with a waste pipe and having a constant supply of water laid on;
  - (b) a sufficient supply of clean towels renewed daily, and soap or other suitable cleaning material.
- (2) In addition to the facility in sub-paragraph (1) an approved type of emergency shower with eye fountain shall be provided and maintained in good working order. Wherever necessary, in order to ensure continuous water supply, storage tank of 1,500 liters capacity shall be provided as a source of clean water for emergency use.

#### **7. Cautionary placard**

A cautionary placard in the form specified below and printed in the language of the majority of the workers employed shall be affixed in a prominent place in the factory where it can be easily and conveniently read by the workers.

#### **CAUTIONARY NOTICE**

1. Chemicals handled in this plant are corrosive and poisonous.
2. Smoking, chewing tobacco, eating food or drinking, in this area is prohibited. No food stuff or drink shall be brought in this area.
3. Some of these chemicals may be absorbed through the skin and may cause poisoning.
4. A good wash shall be taken before meals.
5. Protective devices supplied shall be used while working in this area.
6. Spillage of the chemicals on any part of the body or on the floor shall be immediately washed away with water.
7. All workers shall report for the prescribed medical tests regularly to protect their own health.

#### **8. Medical facilities and records of examinations and tests**

- (1) The occupier shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector-cum-Facilitator;
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a) ; and
  - (c) maintain a sufficient supply of suitable barrier cream, ointment and impermeable water proof plaster in a separate box readily accessible to the workers and used solely for the purpose of keeping these substances. In case cyanides are used in the bath, the box shall also contain an emergency cyanide kit.
- (2) The medical practitioner shall examine all workers before they are employed in electrolytic processes. Such examination in case of chrome plating shall include inspection of hands, forearms and nose and will be carried out once at least in every fortnight.
- (3) The record of the examinations referred to in sub-paragraph (2) shall be maintained in Health Register in Form **XXXIII** which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **9. Medical examination by the Medical Officer**

- (1) Every worker employed in the electrolytic processes shall be examined by a Medical Officer before his first employment. Such examination shall include X-ray of the chest and
  - i. in case of chromium plating, include examination for nasal septum

- perforation and test for chromium in urine
  - ii. in case of nickel plating, test for nickel in urine; and
  - iii. in case of cadmium plating, test for cadmium in urine and -2 microlobulin in urine.
- (2) No worker shall be employed in any electrolytic process unless certified fit for such employment by the Medical Officer.
- (3) Every worker employed in the electrolytic processes shall be re-examined by a Medical Officer atleast once in every year except in case of the workers employed in cadmium, chromium and nickel plating processes for whom this examination shall be carried out once in every six months. Such re-examination shall, wherever the Medical Officer considers appropriate, include tests as specified under sub-paragraph (1) excluding the X- ray of the chest which shall not be required normally to be carried out earlier than once in three years.
- (4) The Medical Officer after examining a worker shall issue a Certificate of Fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be kept in the custody of the Occupier of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests shall also be entered by the Medical Officer in a health register in **Form XXXIII**
- (5) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (6) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the electrolytic processes on the ground that continuance therein would involve danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person declared unfit in such circumstances shall be provided with alternate placement facility unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (7) No person who has been found unfit to work as said in sub-paragraph (6) shall be re-employed or permitted to work in the said processes unless the Medical Officer, after further examination again certifies him fit for employment in those processes.

## **SCHEDULE-P**

**(See rule 96 (2) & (4))**

### **MANUFACTURE AND REPAIR OF ELECTRIC ACCUMULATORS**

#### **1. Savings**

This Schedule shall not apply to the manufacture or repair of electric accumulators or parts thereof not containing lead or any compound of lead; or to the repair on the premises, of any accumulator forming part of a stationary battery.

#### **2. Definitions**

For the purposes of this schedule

- (a) "Lead process" means the melting of lead or any materials containing lead, casting, pasting, lead burning, or any other work, including trimming, or any other abrading or cutting of pasted plates, involving the use, movement or manipulation of, or contact with, any oxide of lead.
- (b) "Manipulation of raw oxide of lead" means any lead process involving any manipulation or movement of raw oxides of lead other than its conveyance

in a receptacle or by means of an implement from one operation to another.

### **3. Separation of certain processes**

Each of the following processes shall be carried on in such a manner under such conditions as to secure effectual separation from one another, and from any other process;

- (a) Manipulation of raw oxide of lead;
- (b) Pasting;
- (c) Drying of pasted plates;
- (d) Formation with lead burning ("tacking") necessarily carried on in connection therewith;
- (e) Melting down of pasted plates.

### **4. Air-space**

In every room in which a lead process is carried on, there shall be atleast 14.2 cubic meters of air space for each person employed therein, and in computing this air space no height over 3.7 meters shall be taken into account.

### **5. Ventilation**

Every workroom shall be provided with inlets and outlets of adequate size as to secure and maintain efficient ventilation in all parts of the room.

### **6. Distance between workers in pasting room**

In every pasting room the distance between the centre of the working position of any paster and that of the paster working nearest to him shall not be less than 1.5 meters.

### **7. Floor of work-rooms**

- (1) The floor of every room in which a lead process is carried on shall be
  - (a) of cement or similar material so as to be smooth and impervious to water;
  - (b) maintained in sound condition;
  - (c) kept free from materials, plant, or other obstruction not required for, or produced is the process carried on in the room.
- (2) In all such rooms other than grid casting shops the floor shall be cleansed daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.
- (3) In grid casting shop the floor shall be cleansed daily.
- (4) Without prejudice to the requirements of sub- paragraphs (1), (2) and (3) where manipulation of raw oxide of lead or pasting is carried on, the floor shall also be
  - (a) kept constantly moist while work is being done;
  - (b) provided with suitable and adequate arrangements for drainage ;
  - (c) Thoroughly washed daily by means of a hose pipe.

### **8. Work-benches**

The work benches at which any lead process is carried on shall

- i. have a smooth surface and be maintained in sound condition;
- ii. be kept free from all materials or plant not required for, or produced in, the process carried on thereat; and all such work-benches other than those in grid casting shops shall
- iii. be cleaned daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat; and, all such work-benches in grid casting shops shall
- iv. be cleansed daily;  
and every work-bench used for pasting shall

- v. be covered throughout with sheet lead or other impervious material;
- vi. be provided with raised edges;
- vii. be kept constantly moist while pasting is being carried on.

## **9. Exhaust draught**

The following processes shall not be carried on without the use of an efficient exhaust draught;

- (a) Melting of lead or materials containing lead.
- (b) Manipulation of raw oxide of lead, unless done in an enclosed apparatus so as to prevent the escape of dust into the workroom.
- (c) Pasting
- (d) Trimming, brushing, filing or any other abrading or cutting of pasted plates giving rise to dust.
- (e) Lead burning, other than
  - i. "tacking" in the formation room;
  - ii. chemical burning for the making of lead linings for cell cases necessarily carried on in such a manner, that the application of efficient exhaust is impracticable.

Such exhaust draught shall be effected by mechanical means and shall operate on the dust or fume given off as nearly as maybe at its point of origin, so as to prevent its entering the air of any room in which persons work.

## **10. Fumes and gases from melting pots**

The products of combustion produced in the heating of any melting pot shall not be allowed to escape into a room in which persons work.

## **11. Container for dross**

A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the workroom, except when dross is being deposited therein.

## **12. Container for lead waste**

A suitable receptacle shall be provided in every workroom in which old plates and waste material which may give rise to dust shall be deposited.

## **13. Racks or shelves in drying room**

The racks or shelves provided in any drying room shall not be more than 2.4 meters from the floor not more than 61 centimeters in width: provided that as regards racks or shelves set or drawn from both sides the total width shall not exceed 1.2 meters. Such racks or shelves shall be cleansed only after being thoroughly damped unless an efficient suction cleaning apparatus is used for this purpose.

## **14. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory in which manufacture and repair of electric accumulators is carried on shall
  - 1. Employ a qualified medical practitioner for medical surveillance of the workers employed therein, whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - 2. Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examination and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which

shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **15. Medical examination by Medical Officer**

- (1) Every worker employed in lead processes shall be examined by a Medical Officer within 15 days of his first employment. Such examination shall include tests for lead in urine and blood. ALA in urine, hemoglobin content stippling of cells and steadiness test. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the said processes shall be re-examined by a Medical Officer atleast once in every three calendar months. Such re-examination shall, wherever the Medical Officer considers appropriate, include tests specified in sub-paragraph (1).
- (3) The Medical Officer after examining a worker, shall issue a Certificate of Fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Occupier of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said processes unless the Medical Officer, after further examination, again certifies him fit for employment in those processes.

#### **16. Protective clothing**

Protective clothing shall be provided and maintained in good repair for all persons employed in

- (a) Manipulation of raw oxide of lead;
- (b) pasting;
- (c) the formation room ;

and such clothing shall be worn by the persons concerned. The protective clothing shall consist of a waterproof apron and waterproof footwear; and, also as regards persons employed in the manipulation of raw oxide of lead or in pasting, head coverings. The head coverings shall be washed daily.

#### **17. Mess-room**

There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable mess-room which shall be furnished with (a) sufficient tables and benches, and (b) adequate means for warming food.

The mess-room shall be placed under the charge of a responsible person, and shall be kept clean.

#### **18. Cloak-room**

There shall be provided and maintained for the use of all persons employed in a lead

process

- (a) A cloak-room for clothing put off during working hours with adequate arrangements for drying the clothing if wet. Such accommodation shall be separate from any mess-room.
- (b) Separate and suitable arrangements for the storage of protective clothing provided under paragraph 16.

### **19. Washing facilities**

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in a lead process

- (a) A wash place under cover, with either
  - (i) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow of atleast 61 centimeters for every five such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters ; or
  - (ii) atleast one wash basin for every live such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water laid on;
  - (iii) a sufficient supply of clean towels made of suitable materials renewed daily, which supply, in the case of pasters and persons employed in the manipulation of raw oxide of lead, shall include a separate marked towel for each such worker ; and
  - (iv) a sufficient supply of soap or other suitable cleansing material and of nail brushes.
- (b) There shall in addition be provided means of washing in close proximity to the rooms in which manipulation of raw oxide of lead or pasting is carried on if required by notice in writing from the Chief Inspector-cum-Facilitator.

### **20. Time to be allowed for washing**

Before each meal and before the end of the day's work, atleast ten minutes, in addition to the regular meal times, shall be allowed for washing to each person who has been employed in the manipulation of raw oxide of lead or in pasting:

Provided that if there be one basin or 61 centimeters of trough for each such person this rule shall not apply.

### **21. Facilities for bathing**

Sufficient bath accommodation to the satisfaction of the Chief Inspector-cum-Facilitator shall be provided for all persons engaged in the manipulation of raw oxide of lead or in pasting, and a sufficient supply of soap and clean towels.

### **22. Food, drinks, etc., prohibited in workrooms**

No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any workroom in which any lead process is carried on.



**SCHEDULE-Q**  
**(See rule 96 (2) & (4))**  
**GLASS MANUFACTURE**

**1. Definitions**

For the purpose of this schedule

- (a) "Efficient exhaust draught" means localized ventilation effected by mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as far as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fume, or dust originate.
- (b) "Lead compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid a quantity of soluble lead compound exceeding when calculated as lead monoxide, 5 percent of the dry weight of the portion taken for analysis.

The method of treatment shall be as follows:

A weighed quantity of the material which has been dried at 100° C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 percent by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate.

**2. Exhaust draught**

The following processes shall not be carried on except under an efficient exhaust draught or under such other conditions as may be approved by the Chief Inspector-cum-Facilitator:

- (a) The mixing of raw materials to form a "batch".
- (b) The dry grinding, glazing and polishing of glass or any article of glass.
- (c) All processes in which hydrofluoric acid fumes or ammoniacal vapors are given off.
- (d) All processes in the making of furnace moulds or "pots" including the grinding or crushing of used "pots"
- (e) All processes involving the use of a dry lead compound.
- (f) All furnaces, heating ovens and driers.
- (g) All machineries involving the secondary processing on glass material

**3. Floors and work-benches**

The floor and work-benches of every room in which a dry compound of lead is manipulated or in which any process is carried on giving off silica dust shall be kept moist and shall comply with the following requirements

The floor shall be --

- (a) of cement or similar material so as to be smooth and impervious to water ;
- (b) maintained in sound conditions ; and
- (c) cleansed daily after being thoroughly sprayed with water at a time when no other work is being carried on in the room.

The work-benches shall —

- (a) have a smooth surface and be maintained in sound condition, and
- (b) be cleansed daily either after being thoroughly damped or by means of a suction cleaning apparatus at a time when no other work is being carried on thereat.

#### **4. Use of Hydrofluoric Acid**

The following provisions shall apply to rooms in which glass is treated with hydrofluoric acid:

- (a) There shall be inlets and outlets of adequate size so as to secure and maintain efficient ventilation in all parts of the room
- (b) the floor shall be covered with gutta-percha and be tight and shall slope gently down to a covered drain;
- (c) the work places shall be so enclosed in projecting hoods that openings required for bringing in the objects to be treated shall be as small as practicable ; and
- (d) the efficient exhaust draught shall be so contrived that the gases are exhausted downwards.

#### **5. Storage and transport of Hydrofluoric acid**

Hydrofluoric acid shall not be stored or transported except in cylinders or receptacles made of lead or rubber.

**6.** Suitable facilities shall be readily available for sterilizing the blow-pipes used by the glass blowers and such blow-pipes shall be sterilized at the beginning of the operations of blowing, each day.

#### **7. Work near furnaces**

- i. No person shall carry out any work near furnace within the distance dangerous to the health and safety.
- ii. All precautions shall be taken to prevent de-hydration to the workers employed near-by.

#### **8. Provision of safety arrangements**

- i) Suitable interlock arrangement shall be provided and maintained in all the machines so as to ensure the safety of persons employed therein.
- ii) No process or work shall be carried on in such a manner as to cause risk of bodily injury to the persons employed.

#### **9. Food, drinks, etc., prohibited in workrooms**

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any room or work place wherein any process specified in paragraph 3 is carried on.

#### **10. Protective clothing**

The occupier shall provide, maintain in good repair and keep in a clean condition for the use of all persons employed in the processes specified in paragraph 3 suitable protective clothing, footwear and goggles according to the nature of the work and such clothing, footwear, etc., shall be worn by the persons concerned.

#### **11. Washing facilities**

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in the processes specified in paragraph 3

- (a) a wash place with either
  - i. a trough with a smooth impervious surface fitted with a waste pipe, without plug and of sufficient length to allow of atleast 61 centimeters for every five

such persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters ; or

- ii. atleast one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available ; and

a sufficient supply of clean towels made of suitable materials renewed daily with a sufficient supply of soap or other suitable cleansing material and of nail brushes ; and

- (b) a sufficient number of stand pipes with taps - the number and location of such stand pipes shall be to the satisfaction of the Chief Inspector-cum-Facilitator.

## **12. Medical facilities and record of examinations and tests**

- (1) The Occupier of every factory in which glass manufacturing processes are carried out, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The records of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

## **SCHEDULE-R**

**(See rule 96 (2) & (4))**

## **GRINDING OR GLAZING OF METALS AND PROCESSES INCIDENTAL THERETO**

### **1. Definitions**

For the purposes of this schedule

- (a) "Grindstone" means a grindstone composed of natural or manufactured sandstone but does not include a metal wheel or cylinder into which blocks of natural or manufactured sandstone are fitted.
- (b) "Abrasive wheel" means a wheel manufactured of bonded emery or similar abrasive.
- (c) "Grinding" means the abrasion, by aid of mechanical power of metal, by means of a grindstone or abrasive wheel.
- (d) "Glazing" means the abrading, polishing or finishing by aid of mechanical power of metal, by means of any wheel, buff mop or similar appliance to which any abrading or polishing substance is attached or applied.
- (e) "Racing" means the turning up, cutting or dressing of a revolving grindstone before it is brought into use for the first time.
- (f) "Hacking" means the chipping of the surface of a grindstone by a hack or similar tool.
- (g) "Rodding" means the dressing of the surface of a revolving grindstone by the application of rod, bar or strip of metal to such surface.

### **2. Safety precautions regarding grinding and glazing machinery**

- (1) All collars, set screws, shafts, couplings, clutches, keys, pulleys, keys and belts in polishing and grinding machines shall be effectively guarded.
- (2)
  - (i) Defective wheels shall not be used.

- (ii) Grinding wheels shall fit freely on their spindles. They shall never be forced on, nor shall they be let loose on spindles.
- (iii) The soft metal bushings at the centre shall not extend beyond the sides of the wheels. Wheels shall be kept as true as practicable and work rests shall be kept adjusted close to wheels.
- (iv) Wherever possible a compressible medium such as blotting paper, rubber or similar material, atleast as large III diameter as that of the flanges, shall be fitted between a wheel and each of its flanges.
- (v) Projecting arbor ends of grinding and polishing wheels shall be effectively guarded.
- (3) Every emery or abrasive wheel shall be provided with a strong iron cover guard that shall enclose the wheel as far as practicable to retain fragments in the event of bursting. The guard shall be securely attached to the frame of the machine or other solid foundation.
- (4) Wheels shall not be operated at a speed in excess of that which is recommended by the manufacturer.

### **3. Equipment for removal of dust**

No racing, dry grinding or glazing shall be performed without

- (a) a hood or other appliance so constructed, arranged, placed, and maintained as substantially to intercept the dust thrown off;
- (b) a duct of adequate size, air-tight and so arranged as to be capable of carrying away the dust, which dust shall be kept free from obstruction and shall be provided with proper means of access for inspection and cleaning, and where practicable, with a connection at the end remote from the fan to enable the Inspector-cum-Facilitator to attach thereto any instrument necessary for ascertaining the pressure of air in the said duct; and
- (c) a fan or other efficient means of producing a draught sufficient to extract the dust :

Provided that the Chief Inspector-cum-Facilitator may accept any other appliance that is, in his opinion, as effectual for the interception, removal and disposal of dust thrown off as a hood, duct and fan would be.

### **4. Restriction on employment on grinding operations**

Not more than one person shall at any time perform the actual process of grinding, or glazing upon a grindstone, abrasive wheel or glazing appliance:

Provided that this paragraph shall not prohibit the employment of persons to assist in the manipulation of heavy or bulky articles at any such grindstone, abrasive wheel or glazing appliance.

### **5. Glazing**

Glazing or other processes, except processes incidental to wet grinding upon a grindstone shall not be carried on in any room in which wet grinding upon a grindstone is done.

### **6. Hacking and rodding**

Hacking or rodding shall not be done unless during the process either (a) an adequate supply of water is laid on at the upper surface of the grindstone or (b) adequate appliances for the interception of dust are provided in accordance with the requirements of paragraph 3.

### **7. Examination of dust equipment**

- (a) All equipment for the extraction or suppression of dust shall atleast once in every six

months be examined and tested by a competent person, and any defect disclosed by such examination and test shall be rectified as soon as practicable.

- (b) A register containing particulars of such examination and test shall be kept in **Form No. XXXV**

#### **8. Personnel Protective Equipment :-**

The occupier of every factory to which this schedule applies shall provide to workers personnel protective equipments such as breathing apparatus, hand gloves, shoes, helmets, goggles, earplug, aprons, etc, as per the relevant standard prescribed by the Bureau of Indian Standards, or in absence of it, relevant international standards and maintained in good conditions for use of every person employed.

#### **9. Medical facilities and record of examinations and tests**

- (1) The occupier of every factory in which grinding or glazing of metals are carried out, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- 4) Every worker employed in grinding or glazing of metal and processes incidental thereto shall be examined by a Medical practitioner within 15 days of his first employment and re-examined atleast once in every 12 calendar months, which shall include respiratory and hearing evaluation.

#### **SCHEDULE-S**

**(See rule 96 (2) & (4))**

### **MANUFACTURE AND TREATMENT OF LEAD AND CERTAIN COMPOUNDS OF LEAD**

#### **1. Definitions**

For the purposes of this schedule

- (a) "Lead compound" means any compound of lead other than galena which, when treated in the manner described below, yields to an aqueous solution of hydrochloric acid, a quantity of soluble lead compound exceeding, when calculated as lead monoxide, five per cent. of the dry weight of the portion taken for analysis. In the case of paints and similar products and other mixtures containing oil or fat the "dry weight" means the dry weight of the material remaining after the substance has been thoroughly mixed and treated with suitable solvents to remove oil, fats, varnish or other media.

The method of treatment shall be as follows:

A weighed quantity of the material which has been dried at 100°C and thoroughly mixed shall be continuously shaken for one hour, at the common temperature with 1,000 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent. by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear liberate shall then be precipitated as lead sulphide and weighed as lead sulphate.

- (b) "Efficient exhaust draught" means localized ventilation effected by heat or mechanical means, for the removal of gas, vapour, dust or fumes so as to prevent them (as practicable under the atmospheric conditions usually prevailing) from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originate.
- (c) "Manipulation" means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping, handling, using, etc.

## **2. Application**

This schedule shall apply to all factories or parts of factories in which any of the following operations are carried on:

- a. Work at a furnace where the reduction or treatment of zinc or lead ores is carried on.
- b. The manipulation, treatment or reduction of ashes containing lead, the desilverising of lead or the melting of scrap lead or zinc.
- c. The manufacture and manipulation of solder or alloys containing more than ten percent of lead.
- d. The manufacture of any oxide, carbonate, sulphate, chromate, acetate, nitrate, or silicate of lead.
- e. Handling or mixing of lead tetraethyl.
- f. Any other operation involving the use of a lead compound.
- g. The cleaning of workroom where any of the operations aforesaid are carried on.

## **3. Requirements to be observed**

No person shall be employed or permitted to work in any process involving the use of lead compounds if the process is such that dust or fume from a lead compound is produced therein, or the persons employed therein are liable to be splashed with any lead compound in the course of their employment unless the provisions of paragraphs 6 to 14 are complied with.

## **4. Exhaust draught**

Where dust, fume, gas or vapour is produced in the process, provision shall be made for removing them by means of any efficient exhaust draught so contrived as to operate on the dust, fume, gas or vapour as closely as possible to the point of origin.

## **5. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies shall
  - a. employ a qualified medical practitioner for medical surveillance of the workers employed therein whose appointment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - b. Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (3) Every worker employed in the processes referred to in paragraph 3 shall be examined by a Medical practitioner within 15 days of his first employment. Such examination shall include tests for lead in blood and urine, ALA in urine, hemoglobin content, stippling of cells and steadiness tests. No worker shall be

allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical practitioner.

- (4) Every worker employed in the said processes shall be re-examined by a Medical practitioner atleast once in every three calendar months. Such re-examination shall, wherever the Medical practitioner considers appropriate, include tests specified in sub-paragraph (3).

#### **6. Food, drinks, etc., prohibited in workrooms**

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any workroom in which the process is carried on and no person shall remain in any such room during intervals for meals or rest.

#### **7. Protective clothing**

Suitable protective overalls and head coverings shall be provided, maintained and kept clean by the factory occupier and such overalls and head coverings shall be worn by the persons employed.

#### **8. Cleanliness of workrooms, tools, etc**

The rooms in which the person's are employed and all tools and apparatus used by them shall be kept in a clean state.

#### **9. Washing facilities**

- (1) The occupier shall provide and maintain for the use of all persons employed, suitable washing facilities consisting of
  - a. a trough with a smooth impervious surface fitted with a waste pipe without plug and of sufficient length to allow atleast 61 centimeters for every ten persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 61 centimeters ; or
  - b. atleast one wash-basin for every ten persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of clean water, together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material and clean towels.
- (2) The facilities so provided shall be placed under the charge of a responsible person and shall be kept dean.

#### **10. Mess-room or Canteen**

The occupier shall provide and maintain for the use of the persons employed suitable and adequate arrangements for taking their meals. The arrangement shall consist of the use of a room separate from any workroom which shall be furnished with sufficient tables and benches and unless a canteen serving hot meals is provided, adequate means for warming food. The room shall be adequately ventilated by the circulation of fresh air shall be placed under the charge of a responsible person and shall be kept clean.

#### **11. Cloak-room**

The occupier shall provide and maintain for the use of persons employed, suitable accommodation for clothing not worn during working hours, and for the drying of wet clothing.

## **SCHEDULE-T**

**(See rule 96 (2) & (4))**

### **GENERATION OF GAS FROM DANGEROUS PETROLEUM**

#### **1. Flame traps**

The plant for generation of gas from dangerous petroleum and associated piping and fittings shall be fitted with atleast two efficient flame traps so designed and maintained as to prevent a flash back from any burner to the plant. One of these traps shall be fitted as close to the plant as possible. The plant and all pipes and valves shall be installed and maintained free from leaks.

#### **2. Generating building or room**

All plants for generation of gas from dangerous petroleum erected after the coming into force of the provisions specified in this schedule shall be erected outside the factory building proper in a separate well ventilated building (hereinafter referred to as the "generating building"). In the case of such plant erected before the coming into force of the provisions specified in this schedule there shall be no direct communication between the room where such plants are erected (hereinafter referred to as the "generating room"), and the remainder of the factory building. So far as practicable, all such generating rooms shall be constructed of fire-resisting materials.

#### **3. Fire Extinguishers**

An efficient means of extinguishing petrol fires shall be maintained in an easily accessible position near the plant for generation of gas from dangerous petroleum.

#### **4. Plant to be approved by the Chief Inspector-cum-Facilitator**

Gas from dangerous petroleum shall not be manufactured except in a plant for generating gas from dangerous petroleum, the design and construction of which has been approved by the Chief Inspector-cum-Facilitator.

#### **5. Escape of dangerous petroleum**

Effective steps shall be taken to prevent dangerous petroleum from escaping into any drain or sewer.

#### **6. Prohibition relating to smoking, etc.,**

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in the generating room or generating building or in the vicinity thereof and a warning notice in the language understood by the majority of the workers shall be pasted in the factory prohibiting smoking and the carrying of matches, fire or naked light or other means of producing a naked light or spark into such room or building.

#### **7. Access to dangerous petroleum or container**

No unauthorized person shall have access to any dangerous petroleum or to vessel containing or having actually contained (dangerous) petroleum.

#### **8. Electric fittings**

All electric fittings shall be of flame-proof construction and all electric conductors shall either be enclosed in metal conduits or be lead sheathed.

#### **9. Construction of doors**

All doors in generating room or generating building shall be constructed to open outwards or to slide and no door shall be locked or obstructed or fastened in such a manner that it cannot be easily and immediately opened from the inside while gas is



being generated and any person is working in the generating room or generating building.

#### **10. Repair of containers**

No vessel that has contained petroleum shall be repaired in a generating room or generating building and no repairs to any such vessel shall be undertaken unless live-steam has been blown into the vessel and until the interior is thoroughly steamed out or other equally effective steps have been taken to ensure that it has been rendered free from dangerous petroleum or inflammable vapour.

### **SCHEDULE-U**

**(See rule 96 (2) & (4))**

### **CLEANING SMOOTHING ROUGHENING ETC., OF ARTICLES BY A JET OF SAND METAL SHOT OR GRIT OR OTHER ABRASIVE PROPELLED BY A BLAST OF COMPRESSED AIR OR STEAM**

#### **1. Definitions**

For the purposes of this schedule

"Blasting" means cleaning, smoothing, peening, roughening or removing of any part of the surface of any article by the use as an abrasive of a jet of sand, metal shot, or grit or other material, propelled by a blast, of compressed air or steam.

"Blast enclosures" means a chamber, barrel cabinet or any other enclosure designed for the performance of blasting therein.

"Blasting chamber" means a blasting enclosure in which any person may enter at any time in connection with any work or otherwise.

"Cleaning of castings", where done as an incidental or supplemental process in connection with the making of metal castings, means, the freeing of the casting from adherent sand or other substance and includes the removal of dross and the general smoothing of a casting, but does not include the free treatment.

#### **2. Prohibition of sand blasting**

Sand or any other substance containing free silica shall not be introduced as an abrasive into any blasting apparatus and shall not be used for blasting

#### **3. Precautions in connection with blasting operations**

- (1) Blasting to be done in blasting enclosure: Blasting shall not be done except in a blasting enclosure and no work other than blasting and any work immediately incidental thereto and cleaning and repairing of the enclosure including the plants and appliances situated therein, shall be performed in a blasting enclosure. Every door, aperture and joint of blasting enclosure, shall be kept closed and air-tight, while blasting is being done therein.
- (2) Maintenance of blasting enclosure: Blasting enclosure shall always be maintained in good condition and effective measures shall be taken to prevent dust escaping from such enclosures and from any apparatus connected therewith, into the air of any room.
- (3) Provision of separating apparatus: There shall be provided and maintained for and in connection with every blasting enclosure, efficient apparatus for separating, so far as practicable, abrasive which has been used for blasting and which is to be used again as an abrasive, from dust or particles or other materials arising from blasting; and no such abrasive shall be introduced into any blasting apparatus and

used for blasting until it has been so separated:

Provided that this clause shall not apply, except in the case of blasting chambers, to blasting enclosures constructed or installed before the coming into force of this Schedule, if the Chief Inspector-cum-Facilitator is of the opinion that it is not reasonably practicable to provide such separating apparatus.

- (4) Provision of ventilating plant: There shall be provided and maintained in connection with every blasting enclosure efficient ventilating plant to extract, by exhaust draught effected by mechanical means, dust produced in the enclosure. The dust extracted and removed shall be disposed of by such method and in such a manner that it shall not escape into the air of any room; and every other filtering or settling device situated in a room in which persons are employed, other than persons attending to such bag or other filtering or settling device, shall be completely separated from the general air of that room in an enclosure ventilated to the open air.
- (5) Operation of ventilating plant: The ventilating plant provided for the purpose of sub- clause (4) shall be kept in continuous operation wherever the blasting enclosure is in use whether or not blasting is actually taking place therein, and in the case of a blasting chamber, it shall be in operation even when any person is inside the chamber for the purpose of cleaning.
- (6) No person shall be required or allowed to work in blasting enclosure unless he is provided with suitable breathing apparatus capable of continuous supply of fresh air.
- (7) No process or work shall be carried on in such a manner as to cause risk of bodily injury to the persons employed.

#### **4. Inspection and examination**

- (1) Every blasting enclosure shall be examined by a qualified person once in every week and specially tested by a competent person once in every six months, in which it is used for blasting. Every blasting enclosure, the apparatus connected therewith and the ventilating plant shall be thoroughly examined and in the case of ventilating plant, examined by a qualified person once in every month and tested by a competent person once in every six months.
- (2) Particulars of the result of every such inspection, examination and test shall forthwith be entered in a register in **Form XXXV**, which shall be kept in a form approved by the chief Inspector-cum-Facilitator and shall be available for inspection by any workman employed in, or in connection with, blasting in the factory. Any defect found on any such inspection, examination or test shall be immediately reported by the person carrying out the inspection, examination or test to the Occupier or other appropriate person and without prejudice to the foregoing requirements of this Schedule, shall be removed without avoidable delay.

#### **5. Provision of protective helmets, gauntlets and overalls**

- (1) There shall be provided and maintained for the use of all persons who are employed in a blasting chamber, whether in blasting or in any work connected therewith or in cleaning such a chamber, protective helmets of a type approved by a certificate of the Chief Inspector-cum-Facilitator; and every such person shall wear the helmet provided for this use whilst he is in the chamber and shall not remove it until he is outside the chamber
- (2) Each protective helmet shall carry a distinguishing mark indicating the person by whom it is intended to be used and no person shall be allowed or required to wear a helmet not carrying his mark or a helmet which has been worn by another

- person and has not since be thoroughly disinfected.
- (3) Each protective helmet when in use shall be supplied with clean and not unreasonably cold air at a rate of not less than 0.17 cubic meter per minute.
  - (4) Suitable gauntlets and overalls shall be provided for the use of all persons while performing blasting or assisting at blasting and every such person shall, while so engaged, wear the gauntlet and overall provided.

#### **6. Precautions in connection with cleaning and other work**

- (1) Where any person is engaged upon cleaning of any blasting apparatus or blasting enclosure or of any apparatus or ventilating plant connected therewith or the surroundings thereof or upon any other work in connection with any blasting apparatus or blasting enclosure or with any apparatus or ventilating plant connected therewith so that he is exposed to the risk of inhaling dust which has arisen from blasting, all practicable measures shall be taken to prevent such inhalation.
- (2) In connection with any cleaning operation referred to in clause 5 and the removal of dust from filtering or settling devices all practicable measures shall be taken to dispose of the dust in such manner that it does not enter the air of any room. Vacuum cleaners shall be provided and used wherever practicable for such cleaning operations.

#### **7. Storage accommodation for protective wear**

Adequate and suitable storage accommodation for the helmets, gauntlets and overalls required to be provided by clause 5 shall be provided outside, and conveniently near to, every blasting enclosure and such accommodation shall be kept clean. Helmets, gauntlets and overalls when not in actual use shall be kept in this accommodation.

#### **8. Maintenance and cleaning of protective wear**

All helmets, gauntlets, overalls, and other protective devices or clothing's provided and worn for the purpose of this Schedule, shall be kept in good condition and so far as is reasonably practicable shall be cleaned on every week day in which they are used. Where dust arising from the cleaning of such protective clothing or devices is likely to be inhaled, all practicable measures shall be taken to prevent such inhalation. Vacuum cleaners shall, wherever practicable, be used for removing dust from such clothing and compressed air shall not be used for removing dust from any clothing.

#### **9. Maintenance of vacuum cleaning plant**

Vacuum cleaning plant used for the purpose of this Schedule shall be properly maintained.

#### **10. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator ; and
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- 3) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Medical practitioner within 15 days of his first employment and

re-examined atleast once in every 12 calendar months, which shall include respiratory and hearing evaluation.

#### **SCHEDULE-V**

**(See rule 96 (2) & (4))**

### **LIMING AND TANNING OF RAW HIDES AND SKINS, WET LEATHER FINISHING AND PROCESSES INCIDENTAL THERETO**

#### **1. Cautionary notices**

- (1) Cautionary notices as to anthrax in the form specified by the Chief Inspector-cum-Facilitator shall be affixed in prominent positions in the factory where they may be easily and conveniently read by the persons employed.
- (2) A copy of a warning notice as to anthrax in the form specified by the Chief Inspector-cum-Facilitator shall be given to each person employed when he is engaged, and subsequently if still employed, on the first day of each calendar year.
- (3) Cautionary notices as to the effects of chrome on the skin shall be affixed in prominent positions in every factory in which chrome solutions are used and such notices shall be so placed as to be easily and conveniently read by the persons employed.
- (4) Notices shall be affixed in prominent places in the factory stating the position of the "First-aid" box or cupboard and the name of the person in charge of such box or cupboard.
- (5) If any person employed in the factory is illiterate, effective steps shall be taken to explain carefully to such illiterate person the contents of the notices specified in paragraphs 1, 2, and 4 and if chrome solutions are used in the factory the contents of the notice specified in Paragraph 3.

#### **2. Protective clothing**

The occupier shall provide and maintain in good condition the following articles of protective clothing:

- (a) water-proof foot-wear, leg coverings, aprons and gloves for persons employed in process involving contact with chrome solutions, including the preparation of such solution;
- (b) gloves and boots for persons employed in lime-yard; and
- (c) protective foot-wear, aprons and gloves for persons employed in processes involving the handling of hides or skins, other than in processes specified in clauses (a) and (b):

Provided that —

- (i) the gloves, aprons, leg coverings or boots may be of rubber or leather, but the gloves and boots to be provided under sub-clauses (a) and (b) shall be of rubber;
- (ii) the gloves may not be provided to persons fleshing by hand or employed in processes in which there is no risk of contact with lime, sodium sulphide or other caustic liquor.

#### **3. Precautions against dangerous fumes, gases, etc.-**

- (1) No person shall be required or allowed to enter any chamber, tank, vat, pit, pipe, flue or other confined space in any factory in which any gas, fume, vapour or dust is likely to be present to such an extent as to involve risk to persons being overcome

thereby, unless it is provided with a manhole of adequate size or other effective means of egress.

- (2) No person shall be required or allowed to enter any confined space as is referred to in sub-paragraph (1), until all practicable measures have been taken to remove any gas, fume, vapour or dust, which may be present so as to bring its level within the permissible limits and to prevent any ingress of such gas, fume, vapour or dust and unless-
- (a) a certificate in writing has been given by a competent person, based on a test carried out by himself that the space is reasonably free from dangerous gas, fume, vapour or dust; or
  - (b) such person is wearing suitable breathing apparatus and a belt securely attached to a rope the free end of which is held by a person outside the confined space.

#### **4. Ventilation**

Adequate ventilation arrangements shall be provided and maintained at all times in the process area where dangerous or toxic or flammable or explosive substances could be present. These arrangements shall ensure that concentrations, which are either harmful or could result in explosion, are not permitted to be built up in the work environment.

#### **5. Washing facilities, mess-room and cloak-room**

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed

- (a) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow at least 61 centimeters for every ten persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters ; or
- (b) at least one wash-basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material, and clean towels ;
- (c) a suitable mess-room, adequate for the number remaining on the premises during the meal intervals, which shall be furnished with (1) sufficient tables and benches and (2) adequate means for warming food and for boiling water.

The mess-room shall

- (1) be separate from any room or shed in which hides or skins are stored, treated or manipulated,
  - (2) be separated from the cloak-room and
  - (3) be placed under the charge of a responsible person ;
- (d) The occupier shall provide and maintain for the use of all persons employed, suitable accommodation for clothing put off during working hours and another accommodation for protective clothing and shall also make adequate arrangements for drying up the clothing in both the cases, if wet. The accommodation so provided shall be kept clean at all times and placed under the charge of a responsible person.

#### **6. Food, drinks, etc., prohibited in work-rooms**

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work room or shed in which hides or skins are stored, treated or manipulated.

## **7. Medical facilities and records of examination and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator;
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a);
  - (c) arrange for inspection of the hands of all the persons keeping in contact with the Chromium substances to be made twice a week ; and
  - (d) provide and maintain and supply suitable ointment and plaster in a box readily accessible to the workers and solely used for the purpose of keeping the ointment and the plaster.
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

## **8. Medical Examination by Medical officer**

- (1) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Medical officer within 15 days of his first employment. Such examination shall include skin test for dermatoses and detection of anthrax bacillus from local lesion by gram stain. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical officer.
- (2) Every worker employed in the said process shall be re-examined by a Medical officer atleast once in every 12 calendar months and such re-examination shall, wherever the Medical officer considers appropriate, include tests as specified in sub-paragraph (1).
- (3) The Medical officer after examining a worker, shall issue a certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination carried out under subparagraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical officer in a Health Register in **Form XXXIII**.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-facilitator.
- (5) If at any time the Medical officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said processes unless the Medical officer, after further examination, again certifies him fit for employment in those processes.

## **SCHEDULE-W**

**(See rule 96 (2) & (4))**

### **PAINTING, POWDER COATING, PRINTING AND PROCESS INCIDENTAL THERETO**

#### **1. Application**

The provisions of this schedule shall apply to all factories or parts of factories in which Painting, Powder Coating, Printing and incidental processes is carried on.

#### **2. Definitions:**

For the purposes of this schedule

- (a) "Powder Coating "means electrostatic spray deposition of dry powder on to the surface of the substrate; and
- (b) "painting" includes varnishing, lacquering and incidental processes.

#### **3. Ventilation**

- (1) Adequate ventilation arrangements shall be provided and maintained at all times in the process area referred in paragraph (1) where dangerous or toxic or flammable or explosive dust, fumes and vapours could be present. These arrangements shall ensure that concentrations, which are either harmful or could result in fire or explosion, are not permitted to be built up in the work environment.
- (2) No person shall be required or allowed to work inside the chamber or booth unless he is provided with suitable breathing apparatus capable of continuous supply of fresh air.
- (3) No process or work shall be carried on in such a manner as to cause risk of bodily injury to the persons employed.

#### **4. Position of spray operators**

Arrangement shall, as far as practicable, be made so as to render it unnecessary for the person operating the spray to be in a position between a ventilating outfit and the article being sprayed.

#### **5. Precautions against ignition**

Wherever there is danger of fire or explosion from accumulation of flammable or explosive dust, fumes or vapours in air:-

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
- (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited ;
- (e) transmission belts with iron fasteners shall not be used; and
- (f) all other precautions as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks overheated surfaces of machinery or plant, chemical or physical chemical reaction and radiant heat.
- (g)

## **6. Washing facilities,**

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed

- (a) a trough with a smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow atleast 61 centimeters for every ten persons employed at any one time, and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters ; or
- (b) atleast one wash-basin for every ten such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water together with, in either case, a sufficient supply of nail brushes, soap or other suitable cleansing material, and clean towels

## **7. Food, drinks, etc., prohibited in work-rooms**

No food, drink, pan and supari or tobacco shall be brought into or consumed by any worker in any work room or shed in which hides or skins are stored, treated or manipulated.

## **8. Medical facilities and records of examination and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - a. employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator;
  - b. Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a);
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (3) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Medical practitioner within 15 days of his first employment. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical practitioner.
- 5) Every worker employed in the said processes shall be re-examined by a Medical practitioner atleast once in every 12 calendar months, which shall include respiratory evaluation.

## **SCHEDULE-X**

**(See rule 96 (2) & (4))**

### **GRAPHITE POWDERING**

#### **1. Application**

The provisions of this schedule shall apply to all factories or parts of factories in which the grinding and sieving of graphite and the processes incidental thereto are carried on.

#### **2. Medical certificates and examinations**

- (1) No person shall be employed in any factory for more than fifteen days in the year upon any of the operations specified in paragraph 1 above unless a special certificate of fitness in **Form XXXIV**, granted to him by a Medical Officer appointed under section 10, is in the custody of the Occupier of the factory.
- (2) The Inspector-cum-Facilitator may require that any person in respect of whom a



certificate referred to in sub-paragraph (1) has been granted shall carry with him while at work a token giving reference to such certificate.

- (3) Every person so employed shall be medically examined, which shall include respiratory and hearing evaluation by a Medical Officer at intervals of not more than six months and a record of such examination shall be entered in the special certificate granted under sub-paragraph (1).
- (4) if at any time a Medical Officer is of opinion that any person is no longer fit for employment upon any of the operations specified in paragraph 1 above he shall cancel the special certificate of fitness granted to that person.
- (5) No person whose special certificate of fitness has been can-celled shall be employed upon any of the operations specified in paragraph 1 above unless a Medical Officer again certifies him to be fit.

### **3. Exhaust draught**

Provisions shall be made for removing the dust produced in any of the operations specified in paragraph 1 above by means of an efficient exhaust draught so contrived as to operate on the dust as closely to the point of origin as possible:

Provided that where the provision of an exhaust draught is not reasonably practicable the Inspector-cum-Facilitator may require

- (a) respirators of a type approved by him to be provided and maintained in a clean and efficient condition by the occupier and worn by every person working under such conditions ; and
- (b) the damping of floors, apparatus and material to prevent the raising of dust.

### **4. Floor and work benches**

- (1) The floor of every room in which any person is employed upon any of the operations specified in paragraph 1 above shall be of cement or other impervious material.
- (2) The top of every work-bench in every such room shall be of impervious material.
- (3) The said floors and work-benches shall be kept dean and in good condition.
- (4) The Inspector-cum-Facilitator may, by order in writing, require the said floors and work-benches to be kept wet in such manner as he may deem suitable, in order to reduce dust.

### **5. Washing facilities**

The occupier shall provide and maintain in a clean state and in good repair for the use of persons employed upon any of the operations specified in paragraph 1 above either (a) a trough with smooth impervious surface fitted with a waste-pipe without plug, and of sufficient length to allow atleast 61 centimeters for every five such persons employed at any one time and having a constant supply of water, from taps or jets above the trough at intervals of not more than 61 centimeters, or (b) atleast one lavatory basin for every five such persons employed at any one time, fitted with a waste pipe and plug having a constant supply of water, together with, in either case a sufficient supply of nail brushes, soap or other suitable cleaning material and clean towels.

### **6. Food, drink, and tobacco**

No food, drink, pan and supari or tobacco shall be brought into, or consumed, in any room in which any person is employed upon any of the operations specified in paragraph 1 above.

### **7. Protective equipments:**

Adequate protective clothing, such as over-alls in a clean condition and dust masks shall be provided by the occupier to every person employed upon any of the operations specified in paragraph 1 above.

#### **SCHEDULE-Y**

**(See rule 96 (2) & (4))**

### **PRINTING PRESS AND TYPE FOUNDRIES - CERTAIN LEAD PROCESS CARRIED ON THEREIN**

#### **1. Definitions**

In these regulations —

- (1) 'Lead material' means material containing not less than 5 Percent of lead.
- (2) 'Lead process' means
  - (a) the melting of lead or any lead material for casting and mechanical composing;
  - (b) the recharging of machines with used lead material ; or
  - (c) any other work including removal of dross from melting pots, cleaning of plungers ; and
  - (d) Manipulation, movement or other treatment of lead material.
- (3) 'Efficient exhaust draught' means localized ventilation effected by heat or mechanical means for the removal of gas, vapour, dust or fumes so as to prevent them from escaping into the air of any place in which work is carried on. No draught shall be deemed efficient which fails to remove gas, vapour, fume or dust at the point where they originate.

#### **2. Exhaust draught**

None of the following process shall be carried on except with an efficient exhaust draught:

- (a) melting lead material or slugs ;
- (b) heating lead material so that vapour containing lead is given off ; or
  - unless carried on in such a manner as to prevent free escape of gas, vapour, fumes or dust into any place in which work is carried an ; or
  - unless carried on in electrically heated and thermostatically control-led melting pots.

Such exhaust draught shall be effected by mechanical means and so contrived as to operate on the dust, fume, gas or vapour given off as closely as may be at its point of origin.

#### **3. Separation of certain processes**

Each of the following processes shall be carried on in such a manner and under such conditions as to secure effectual separation from one another and from any other process:

- (a) melting of lead or any lead material;
- (b) casting of lead ingots ;
- (c) mechanical composing.

#### **4. Container for dross**

A suitable receptacle with tightly fitting cover shall be provided and used for dross as it is removed from every melting pot. Such receptacle shall be kept covered while in the work-room near the machine except when the dross is being deposited therein.

#### **5. Floor of workroom**

The floor of every work- room where lead process is carried on shall be

- (a) of cement or similar material so as to be smooth and impervious to water;
- (b) maintained in sound condition ; and
- (c) shall be cleansed throughout daily after being thoroughly damped with water at a time when no other work is being carried on at the place.

#### **6. Mess room**

There shall be provided and maintained for the use of all persons employed in a lead process and remaining on the premises during the meal intervals, a suitable mess - room which shall be furnished with sufficient tables and benches.

#### **7. Washing facilities**

There shall be provided and maintained in a cleanly state and in good repair for the use of all persons employed in a lead process,

- (a) a wash place with either
  - (i) a trough with smooth impervious surface fitted with a waste pipe without plug, and of sufficient length to allow atleast 61 centimeters for every five such persons employed at any one time and having a constant supply of water from taps or jets above the trough at intervals of not more than 61 centimeters , or
  - (ii) atleast one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having an adequate supply of water laid on or always readily available ; and
- (b) a sufficient supply of clean towels made of suitable material renewed daily with a sufficient supply of soap or other suitable cleaning material.

#### **8. Medical facilities and records of examination and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII** which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **9. Medical Examination by Medical Officer**

- (1) Every worker employed in a lead process shall be examined by a Medical Officer within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, hemoglobin, stippling of cells and steadiness tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the said processes shall be re-examined which shall include respiratory evaluation by a Medical Officer atleast once in every six calendar months. Such re- examination shall, wherever the Medical Officer considers appropriate, include tests as specified in sub-paragraph (1).
- (3) The Medical Officer after examining a worker, shall issue certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be

entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**.

- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re- employed or permitted to work in the said process unless the Medical Officer, after further examination, again certifies him fit for employment in those processes.

#### **10. Food, drinks, etc., prohibited in work rooms**

No food, drink, pan and supari or tobacco shall be consumed or brought by any worker into any work-room in which any lead process is carried on.

### **SCHEDULE-Z**

**(See rule 96 (2) & (4))**

#### **CASHEW-NUT PROCESSING**

##### **1. Application**

The provisions of this schedule shall apply to all factories in which roasting, scrubbing or shelling of cashew-nuts or extracting oil from cashew- nuts or cashew-nuts shells is carried on.

##### **2. Protective clothing and equipment**

The occupier shall provide and maintain --

- (i) for the use of all persons employed in roasting or scrubbing of cashew-nuts or extracting oil from cashew-nuts or cashew- nuts shells
  - (a) suitable rubber or washable leather gloves,
  - (b) suitable impervious aprons with sleeves to cover the body down to the knees and shoulders, and
  - (c) suitable foot-wear to afford protection to the feet and legs against cashew-nut oil ;
- (ii) for the workers employed in cashew- nut shelling, either,
  - (a) protective ointment containing 10 per cent of shellac, 55 percent of alcohol, 10 per cent. of sodium perborate, 5 percent of carbitol and 20 percent of talc, or
  - (b) a sufficient quantity of kaolin and coconut oil ; and
  - (c) shall be evaluated for contact dermatitis once in a period of atleast 6 months.
- (iii) any other material or equipment which the Chief Inspector-cum-Facilitator may deem to be necessary for the protection of the workers.

### **3. Use of protective clothing and equipment**

Every person employed in the processes specified in paragraph 1, shall make use of the protective clothing and equipment supplied and arrangement shall be made by the occupier to supervise their maintenance and cleanliness.

### **4. Disposal of shells, ashes or oil of cashew-nut**

- (i) Shells, ashes or oil of cashew-nut shall not be stored in any room in which workers are employed and shall be removed atleast twice a day to any pit or enclosed place in the case of shells and ashes and to closed containers kept in a separate room in the case of oil.
- (ii) No worker shall be allowed to handle shells or oil of cashew-nut without using the protective measures provided in paragraph 3.

### **5. Floors of work-rooms**

The floor of every work-room in which the processes specified in paragraph 1 are carried on shall be of a hard material so as to be smooth and impervious and of even surface and shall be cleaned daily ; and spillage of any cashew- nut oil in any work-room shall be washed with soap and cleaned immediately.

### **6. Seating accommodation**

Workers engaged in shelling of cashew-nuts shall be provided with adequate seats of work benches which shall be cleaned daily.

### **7. Mess-room**

- (a) There shall be provided and maintained for the use of all persons employed in the processes specified in paragraph 1, a suitable rest room furnished with a sufficient number of tables and chairs or benches ;
- (b) Separate lockers shall be provided where food, etc., shall be stored by workers before it is consumed in the rest room.

### **8. Food, drinks, etc., prohibited in work-rooms**

No food, drink, pan, supari or tobacco shall be brought or consumed by any worker in any room in which the processes specified in paragraph 1 are carried out and no person shall remain in any such room during intervals for meals or rest.

### **9. Washing facilities**

Where roasting, scrubbing and shelling of cashew- nuts or extracting oil from cashew-nuts or Nut shells is carried on, there shall be provided and maintained, in clean and good repair, washing facilities, at the scale of one tap or stand pipe for every ten workers the taps or stand pipes being spaced not less than 4 feet apart and also a sufficient supply of soap, coconut oil, nail brushes and towels.

### **10. Time allowed for washing**

Before each meal and before the end of the day's work atleast ten minutes, in addition to the regular meal times, shall be allowed to any person employed in the process specified in paragraph 1, for the purpose of washing.

### **11. Smoke or gas produced by roasting cashew-nuts**

Where smoke or gas is produced in the operation of roasting, provision shall be made for removing the smoke or gas through a chimney of sufficient height and capacity or by such other arrangements as may be necessary to prevent the gas or smoke from escaping into the air or any place in which workers are employed.

## **12. Storage of protective equipment:**

A suitable room or a portion of the factory suitably partitioned off, shall be provided exclusively for the storage of all the protective equipment supplied to the workers and no such equipment shall be stored in any place other than the room or place so provided.

### **SCHEDULE-AA**

**(See rule 96 (2) & (4))**

## **DYEING, STENCILING, PRINTING AND INCIDENTAL PROCESSES**

### **1. Application**

These provisions shall apply to any factory or such parts of any factory in which dyeing, stenciling, printing and incidental processes is carried on.

### **2. Ventilation**

- (1) Adequate ventilation arrangements shall be provided and maintained at all times in the process area referred in paragraph (1) where dangerous or toxic or flammable or explosive dust, fumes and vapours could be present. These arrangements shall ensure that concentrations, which are either harmful or could result in fire or explosion, are not permitted to be built up in the work environment.
- (2) No process or work shall be carried on in such a manner as to cause risk of bodily injury to the persons employed.

### **3. Protective measures**

The occupier shall provide free of cost and maintain in a good condition for use of all persons engaged in the operations specified in paragraph 1;

- (a) suitable rubber gloves of durable quality for both hands;
- (b) rubber boots of durable quality for both legs ;
- (c) goggles, apron and;
- (d) any other material or appliance which in the opinion of the Chief Inspector-cum-Facilitator shall be necessary for the protection of workers.

### **4. Precautions against ignition**

Wherever there is danger of fire or explosion from accumulation of flammable or explosive dust, fumes or vapours in air:-

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
- (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited ;
- (e) transmission belts with iron fasteners shall not be used; and
- (f) all other precautions as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks overheated surfaces of machinery or plant, chemical or physical chemical reaction and radiant heat

## 5. Food and drink

No food or drink shall be brought into or consumed in, in any room in which any of the operations specified in clause 1 is carried on.

## 6. Floor of work-rooms

The floor of every room in which any of the operations specified in clause 1 is carried on shall be

- (a) of cement or similar material so as to be smooth and impervious to water ;
- (b) maintained in sound condition; and
- (c) provided with suitable and adequate arrangement for drainage.

## 7. Washing facilities

- (i) The occupier shall provide and maintain for the use of all persons employed in operations specified in clause 1, suitable washing facilities consisting of :
  - (a) a masonry or steel water tank capable of holding sufficient water and having taps at the rate of one tap for every ten persons employed at any one time, the floor around the tank and below the taps being cement plastered and maintained in sound and clean condition and suitable and adequate arrangements for drainage being provided around the tanks and the taps ;
  - (b) sufficient supply of nail brushes, non-irritable soap or other suitable cleansing materials and dean towels.
- (ii) The facilities so provided shall be placed under the charge of a responsible person and shall be kept dean.
- (iii) The following method shall be adopted in removing dye from the hands of employees and the occupier shall make readily available in the premises of the factory all the chemicals required for the purpose in the specified proportion:
  - (a) wash with sulphonated oil followed by water ;
  - (b) wash in 1 to 2000 solution of potassium permanganate;
  - (c) wash in two per cent. solution of sodium hydrosulphite or in two percent solution of sodium bisulphite;
  - (d) wash in water; and
  - (e) application of lanolim cream.

**Note:** No person shall be allowed to use turpentine, petroleum, distillates, bleaching powder and other bleaches for removing dirt and dye from his hands.

## 8. Medical examination

- (1) Every person employed in any of the operations specified in paragraph 1 shall be medically examined by a Medical Officer within fifteen days of his first employment in such operations and thereafter shall be examined by the Medical Officer at intervals of not more than twelve months and a record of such examinations shall be entered by the Medical Officer in the Health Register in **Form XXXIII**.
- (2) A Health Register in **Form XXXIII** containing the names of all persons employed in the operations specified in paragraph 1 shall be kept.
- (3) No person after suspension shall be employed unless the Medical Officer after re-examination, again certifies him to be fit for employment.

**Explanation:** 'Suspension' means suspension from employment in any of the operations specified in clause 1 by written certificate in the Health Register signed by the Medical Officer who shall have power to suspend any person employed in any such operation.

## **9. Dermatitis**

- (i) The occupier shall make arrangements to give suitable jobs to workers affected by chronic dermatitis;
- (ii) The occupier shall notify to the Medical Officer all cases of dermatitis.

### **SCHEDULE-AB**

**(See rule 96 (2) & (4))**

#### **POTTERY**

### **1. Definitions**

For the purposes of this schedule

- (a) 'pottery' includes earthenware, stoneware, porcelain, china tiles and any other articles made from clay or from a mixture containing clay, any other materials such as quartz, flint, feldspar and gypsum.
- (b) 'efficient exhaust draught' means localized ventilation effected by mechanical or other means, for the removal of dust or fume so as to prevent it from escaping into the air or any place in which work is carried on. No draught shall be deemed efficient which fails to remove effectively dust or fume generated at the point where dust or fume originates;
- (c) 'fettling' includes scalloping, towing, sand papering, sand sticking, brushing or any other process of cleaning of pottery-ware in which dust is given off ;
- (d) 'leadless glaze' mean a glaze which does not contain more than one percent of its dry weight of a lead compound calculated as lead monoxide ;
- (e) 'low solubility glaze' means a glaze which does not yield to dilute hydrochloric acid more than five per cent. of its dry weight of a soluble lead compound calculated as lead monoxide when determined in the manner described below: —

A weighed quantity of the material which has been dried at 100°C and thoroughly mixed shall be continuously shaken for one hour at the common temperature with 1,003 times its weight of an aqueous solution of hydrochloric acid containing 0.25 per cent. by weight of hydrogen chloride. This solution shall thereafter be allowed to stand for one hour and then filtered. The lead salt contained in the clear filtrate shall then be precipitated as lead sulphide and weighed as lead sulphate;

- (f) 'ground or powdered flint or quartz' does not include natural sands ;
- (g) 'potter's shop' includes all places where pottery is formed by pressing or by any other process and all places where shaping, fettling or other treatment of pottery articles prior to placing for the biscuit firing is carried on.

### **2. Efficient exhaust draught**

The following processes shall not be carried on without the use of an efficient exhaust draught:

- (i) All processes involving the manipulation or use of a dry and unfitted lead compound;
- (ii) The fettling operations of any kind, whether on green ware or biscuit, provided that this shall not apply to the wet fettling, and to the occasional finishing of pottery articles without the aid of mechanical power;
- (iii) The sifting of clay dust or any other material for making tiles or other articles by pressure, except where
  - (a) this is done in a machine so enclosed as to effectively prevent the escape of dust ; or



- (b) the material to be sifted is so damp that no dust can be given off ;
- (iv) The pressing of tiles from clay dust, an exhaust opening being connected with each press ; this clause shall also apply to the pressing from clay dust of articles other than tiles, unless the material is so damp that no dust is given off ;
- (v) The fettling of tiles made from clay dust, by pressure. except where the fettling is done wholly on, or with, damp material;
- (vi) The fettling of other articles made from clay dust, unless the material is so damp that no dust is given off;
- (vii) The process of loading and unloading of saggars, where handling and manipulation of ground and powdered flint, quart, alumina or other materials are involved ;
- (viii) The brushing of earthenware biscuit, unless the process is carried on in a room provided with efficient general mechanical ventilation or other ventilation which is certified by the Inspector-cum-Facilitator as adequate, having regard to all the circumstances of the case ;
- (ix) Fettling of biscuit ware which has been fired in powdered flint or quartz except where this is done in machines so enclosed as to effectively prevent the escape of dust;
- (x) Ware cleaning after the application of glaze by dipping or other process;
- (xi) Crushing and dry grinding of materials for pottery bodies and saggars, unless carried on in machines so enclosed as to effectively prevent the escape of dust or is so damp that no dust can be given off ;
- (xii) Sieving or manipulation of powdered flint, quartz, day grog or mixture of these materials unless it is so damp that no dust can be given off ;
- (xiii) Grinding of tiles on a power- driven wheel unless an efficient water spray is used on the wheel ;
- (xiv) Lifting and conveying of materials by elevators and conveyors unless they are effectively enclosed and so arranged as to prevent escape of dust into the air in or near any place in which persons are employed ;
- (xv) The preparation or weighing out of flow material, lawning of dry colors, colour dusting and colour blowing;
- (xvi) Mould making, unless the bins or similar receptacles are used for holding plaster of paris and provided with suitable covers;
- (xvii) The manipulation of calcined materials unless the material has been made and remain so wet that no dust is given off.

### **3. Certain processes to be carried on so as to secure effective separation from one another**

Each of the following processes shall be carried on in such a manner and under such conditions so as to secure effectual separation from one another, and from wet processes:

- (a) Crushing and by grinding or sieving of materials, fettling, pressing of tiles, drying day and green ware, loading and unloading of saggars ; and
- (b) all processes involving the use of a dry lead compound.

### **4. Restriction on the use of glaze**

No glaze which is not a leadless glaze or a low solubility glaze shall be used in a factory in which pottery is manufactured.

### **5. Potter's wheel**

The potter's wheel (Jolly and Jigger) shall be provided with screens or so constructed as to prevent clay scrapings being thrown off beyond the wheel.

## **6. Prevention of dust**

- (1) All practical measures shall be taken by damping or otherwise to prevent dust arising during cleaning of floors.
- (2) Damp saw dust or other suitable materials shall be used to render the moist method effective in preventing dust rising into the air during the cleaning process which shall be carried out after work has ceased.

## **7. Floors**

The floors of potters' shops, slip houses, dipping houses and ware cleaning rooms shall be hard, smooth and impervious and shall be thoroughly cleaned daily by a moist method by an adult male.

## **8. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory in which manufacture of pottery is carried on, shall --
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

## **9. Medical Examination by Medical Officer**

- (1) Every worker employed in any process mentioned under paragraph 2, shall be examined by a Medical Officer within 15 days of his first employment. Such examination shall include tests for lead in urine and blood, ALA in urine, hemoglobin content, stippling of cells and pulmonary function test and chest X-ray for workers engaged in processes mentioned in clauses (i) and (xiv) of paragraph 2 and pulmonary function tests and chest X-rays for the others. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) All persons employed in any of the processes included under sub-paragraph 2 (i) and (xiv) shall be examined by a Medical Officer once in every three calendar months. Those employed in any other processes mentioned in the remaining sub-paragraphs of paragraph 2 shall be examined by a Medical Officer once in every twelve calendar months. Such examinations in respect of all the workers shall include all the tests as specified in sub-paragraph (1) except chest X-ray which will be once in three years
- (3) The Medical Officer, after examining a worker, shall issue certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory.
- (4) The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**.
- (5) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (6) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in

those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.

- (7) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Medical Officer, after further examination, again certifies him fit for employment in those processes.

#### **11. Protective equipment**

- (1) The occupier shall provide and maintain suitable overalls and head coverings for all persons employed in any process specified in paragraph 2.
- (2) The occupier shall provide and maintain suitable aprons of water-proof or similar material, which can be sponged daily for the use of the dippers, dippers' assistants, throwers, jolly workers, casters, mould makers and filter press and pug mill workers.
- (3) Aprons provided in pursuance of sub- paragraph (2) shall be thoroughly cleaned daily by the wearers by sponging or other wet process. All overalls and head coverings shall be washed, cleaned and mended atleast once a week and the occupier shall provide facilities for such washing, cleaning and mending.
- (4) No person shall be allowed to work in emptying sacks of dusty materials, weighing out and mixing of dusty materials and charging of ball mills and blungers without wearing a suitable and efficient dust respirator.

#### **12. Washing facilities**

The occupier shall provide and maintain, in a cleanly state and in good repair for the use of all persons employed in any of the processes specified in paragraph 2 a wash place under cover with --

(a) either a trough with smooth impervious surface fitted with a waste pipe, without plug, and of sufficient length to allow atleast 60 centimeters for every five such persons employed at any one time, and having a constant supply of clean water from taps or jets above the trough at intervals of not more than 60 centimeter ;

Or

Atleast one tap or stand pipe for every five such persons employed at any one time, and having a constant supply of clean water, the tap or stand pipe being spaced not less than 1.22 meters apart ; and

(b) a sufficient supply of clean towels made of suitable materials changed daily, with sufficient supply of nail brushes and soap.

#### **13. Time allowed for washing**

Before each meal and before the end of the day's work atleast ten minutes, in addition to the regular meal times, shall be allowed for washing to each person employed in any of the processes specified in paragraph 2.

#### **14. Mess-room**

- (1) There shall be provided and maintained for use of all persons remaining within the premises during the rest intervals, a suitable and an adequate mess room providing accommodation at the rate of 0.93 square meters per head and furnished with the following, namely:
  - (a) a sufficient number of tables and chairs or benches with back rests ;
  - (b) arrangements for washing utensils;
  - (c) adequate means for warming food ; and

- (d) adequate quantity of drinking water.
- (2) The room shall be adequately ventilated by the circulation of 'fresh air and placed under the charge of a responsible person and shall be kept clean.

#### **15. Food drinks, etc., prohibited in work- rooms**

No food, drink, pan and supari or tobacco shall be brought into, or consumed by any worker in any work-room in which any process specified in paragraph 2 is carried on and no person shall remain in any such room during intervals for meals or rest.

#### **16. Cloak-room, etc**

There shall be provided and maintained for the use of all persons employed in any process specified in paragraph 2

- (a) a cloak-room for clothing put off during working hours and such accommodation shall be separate from any mess room ; and
- (b) separate and suitable arrangements for the storage of protective equipment provided under paragraph 11.

#### **17. Savings**

Nothing contained in this Schedule shall apply to a factory in which any of the following articles, but no other article of pottery are made:

- (a) unglazed or salt glazed bricks and tiles ; and
- (b) Architectural terra-cotta made from plastic clay and either unglazed or glazed with leadless glaze only.

### **SCHEDULE-AC**

**(See rule 96 (2) & (4))**

### **CHEMICAL WORKS PART I**

#### **1. Application**

This schedule shall apply to all manufacture and processes incidental thereto carried on in chemical works.

#### **2. Definition**

For the purpose of this Schedule

- (a) "chemical works " means any factory or such parts of any factory as are listed in Appendix 'A' to this schedule;
- (b) "efficient exhaust draught" means localized ventilation effected by mechanical or other means for the removal of gas, vapour, fume or dust to prevent it from escaping into the air of any place in which work is carried on;
- (c) "bleaching powder" means the bleaching powder commonly called chloride of lime ;
- (d) "chlorate" means chlorate or perchlorate;
- (e) "caustic" means hydroxide of potassium or sodium;
- (f) "chrome process" means the manufacture of chromate or bi-chromate of potassium or sodium, or the manipulation, movement or other treatment of these substances;
- (g) "nitro or amino process" means the manufacture of nitro or amino derivatives of phenol and of benzene or its homologues and the making of explosives with the use of any of these substances ;
- (h) the term 'permit to work' system means the compliance with the procedures laid down under paragraph 20 of Part II ;
- (i) "toxic substances" means all those substances which when they enter into the

human body, through inhalation or ingestion or absorption through skin in sufficient quantities cause fatality or exert serious affliction of health or chronic harmful effects on the health of persons exposed to it due to its inherent chemical or biological effects in respect of substances whose TLV is specified in Rule 91, exceeding the concentration specified therein would make the substance toxic ;

- (j) "emergency" means a situation or condition leading to a circumstance or set of circumstances in which there is danger to the life or health of persons or which could result in big fire or explosion or pollution to the work and outside environment, affecting the workers or neighborhood in a serious manner, demanding immediate action;
- (k) "dangerous chemical reactions" means high speed reactions, rim-away reactions, delayed reactions, etc., and are characterized by evolution of large quantities of heat, intense release of toxic or flammable gases or vapors, sudden pressure build-up, etc;
- (l) "manipulation" means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping, handling, using, etc. ;
- ~~(m) "approved personal protective equipment" means items of personal protective equipment conforming to the relevant BIS specifications or in absence of it, relevant international standards ,or in the absence of it, personal protective equipment approved by the Chief Inspector cum Facilitator;~~
- (n) "appropriate personal protective equipment" means that when the protective equipment is used by the worker, he shall have no risk to his life or health or body ; and
- (o) "confined space" means any space by reason of its construction as well as in relation to the nature of the work carried therein and where hazards to the persons entering into or working inside exist or are likely to develop during working.

## **PART II**

### **GENERAL REQUIREMENTS**

#### **Applying to all the works in Appendix 'A'**

##### **1. House keeping**

- (1) Any spillage of materials shall be cleaned up before further processing.
- (2) Floors, platforms, stairways, passages and gangways shall be kept free of any obstructions.
- (3) There shall be provided easy means of access to all parts of the plant to facilitate cleaning.

##### **2. Improper use of chemicals**

No chemicals or solvents or empty containers containing residual chemicals, solvents or vapours shall be permitted to be used by workers for any purposes other than in the processes for which they are supplied.

##### **3. Prohibition on the use of food, etc.,**

No food, drink, tobacco, pan or any edible item shall be stored or heated or consumed on or near any part of the plant or equipment.

##### **4. Cautionary notices and instructions**

- (1) Cautionary notices in a language understood by the majority of workers shall be prominently displayed in all hazardous areas drawing the attention of all workers

about the hazards to health, hazards involving fire and explosion and any other hazard such as consequences of testing of material or substances used in the process or using any contaminated container for drinking or eating, to which the workers' attention should be drawn for ensuring their safety and health.

- (2) In addition to the above cautionary notice, arrangement shall be made to instruct and educate all the workers including illiterate workers about the hazards in the process including the specific hazards to which they may be exposed to, in the normal course of their work. Such instructions and education should also deal with the hazards involved in unauthorized and unsafe practices including the properties of substances used in the process under normal conditions as well as abnormal conditions and the precautions to be observed against each and every hazard. Further, an undertaking from the workers shall be obtained within one month of their employment and (or old workers employed, within one month of coming into operation of the rules, to the effect that they have read the contents of the cautionary notices and instructions, understood them and would abide by them. The training and instructions to all workers and all supervisory personnel shall include the significance of different types of symbols and colors used on the labels struck or painted on the various types of containers and pipelines.

#### **5. Evaluation and provisions of safeguards before the commencement of process**

- (1) Before commencing any process or any experimental work, or any new manufacture covered under Appendix 'A', the occupier shall take all possible steps to ascertain definitely all the hazards involved both from the actual operations and the chemical reactions including the dangerous chemical reactions. The properties of the raw materials used, the final products to be made, and any by-products derived during manufacture, shall be carefully studied and provisions shall be made for dealing with any hazards including effects on workers, which may occur during manufacture.
- (2) Information in writing giving details of the process, its hazards and the steps taken or proposed to be taken from the design stage to disposal stage for ensuring the safety as in sub-paragraph (1) above should be sent to the Chief Inspector-cum-Facilitator at the earliest but in no case less than 15 days before commencing manufacture, handling, or storage of any of items covered under Appendix 'A' whether on experimental basis, or as pilot plant or as trial production, or as large-scale manufacture.
- (3) The design, construction, installation, operation, maintenance and disposal of the buildings, plant and facilities shall take into consideration effective safeguards against all the safety and health hazards so evaluated.
- (4) The requirements under the sub-paragraphs (1) to (3) shall not ad in lieu of or in derogation to, any other provisions contained in any Act governing the work.

#### **6. Authorised entry**

Authorised persons only shall be permitted to enter any section of the factory or plant where any dangerous operations or processes are being carried on or where dangerous chemical reactions are taking place or where hazardous chemicals are stored.

#### **7. Examination of instruments and safety devices**

- (1) All instruments and safety devices used in the process shall be tested before taking into use and after carrying out any repair to them and examined once in a month, by a qualified person and once in every six months, by a competent person. Records of such tests and examinations shall be maintained in a register.
- (2) All instruments and safety devices used in the process shall be operated daily or as

often as it is necessary, to ensure its effective and efficient working at all times.

## **8. Electrical Installations**

All electrical installations used in the process covered in Appendix 'A' shall be of an appropriate type to ensure safety against the hazard prevalent in that area such as suitability against dust, dampness, corrosion, flammability and explosion, etc., and shall conform to the relevant ISI specifications governing their construction and use for that area.

## **9. Handling and storage of chemicals**

- (1) The containers for handling and storage of chemicals shall be of adequate strength taking into consideration the hazardous nature of the contents. They shall also be provided with adequate labeling and colour coding arrangements to enable identification of the containers and their contents indicating the hazards and safe handling methods and shall conform to the respective ISI standards. The instructions given in the label shall be strictly adhered to. Damaged containers shall be handled only under supervision of a knowledgeable and responsible person and spillage shall be rendered innocuous in a safe manner using appropriate means.
- (2) The arrangements for the storage of chemicals including charging of chemicals in reaction vessels and containers shall be such as to prevent any risk of fire or explosion or formation of toxic concentration of substances above the limits specified in Rule 91.
- (3) Without prejudice to the generality of the requirements in sub-paragraph (2) above, the arrangements shall have suitable ventilation facilities and shall enable the maintenance of safe levels in vessels and containers. Such arrangements shall also
- (4) take into consideration, the type of flooring and the capacity of flooring and the compatibility requirements of substances with other chemicals stored nearby.
- (5) (a) Storage of chemicals and intermediate products, which are highly unstable or reactive or explosive shall be limited to the quantities required for two months use.  
  
(b) Whenever the quantities laid down in the above clause (a) are to be exceeded, the permission of the Chief Inspector-cum-Facilitator shall be obtained.  
  
(c) Notwithstanding anything contained in clauses (a) and (b) above, the Chief Inspector-cum-Facilitator may direct any factory carrying out processes covered in Appendix 'A' to further limit the storage of hazardous substances to quantities less than two months on considerations of safety.
- (6) Standby arrangements equal to the biggest container shall always be available to transfer the toxic substances quickly into the standby storage facility if any defect develops in any of the containers resulting in the release of toxic substances.
- (7) Any storage facility constructed using non-metallic material such as Fiber glass Reinforced Plastics (FRP), all glass vessels, etc., shall have adequate strength to withstand the stress, if any, exerted by the contents and shall be properly anchored. Working platforms, atom ladders, pipe lines, etc., used in such storage facility shall not have any support on the structure of the storage facility and shall be independently supported.

## **10. Facility for Isolation**

The plant and equipment shall be so constructed and maintained as to enable quick isolation of plant or part of plant or equipment, with appropriate indication. One copy of the layout plan indicating the isolation facilities shall always be available with the security personnel, the maintenance and the Health and Safety personnel and these isolation facilities shall be checked for its effectiveness once in a month.

### **11. Personal protective equipment**

- (1) All workers exposed to the hazards in the processes covered by this schedule shall be provided with appropriate and approved type of personal protective equipment. Such equipment shall be in a clean, sterile and hygienic condition before issue.
- (2) The occupier shall arrange to inform, educate and supervise all the workers in the use of personal protective equipment while carrying out the job.
- (3) As regards any doubt regarding the appropriateness of any personal protective equipment, the decision of the Chief Inspector-cum-Facilitator will be final.

### **12. Alarm systems**

- (1) Suitable alarm and effective alarm systems giving audible and visible indications, shall be installed at the control room as well as in all strategic locations where process control arrangements are available so as to enable corrective action to be taken before the operational parameters exceed the predetermined safe levels or lead to conditions conducive for an outbreak of fire or explosion to occur. Such alarm systems shall be checked daily and tested every month at least once to ensure its performance efficiency at all times.
- (2) The Chief Inspector-cum-Facilitator may direct such systems to be installed in case of plants or processes where toxic materials are being used and spillage or leakage of which may cause widespread poisoning to or around the plant.

### **13. Control of escape of substances into the work atmosphere**

- (1) Effective arrangements such as enclosure, or by-pass or efficient exhaust draught, maintenance of negative pressure, etc., shall be provided in all plants, containers, vessels, sewers, drains, flues, ducts, culverts and buried pipes and equipments, to control the escape and spread of substances which are likely to give rise to fire or explosion or toxic hazards during normal working and in the event of accident or emergency.
- (2) In the event of the failure of the arrangements for control resulting in the escape of substances in the work atmosphere immediate steps shall be taken to control the process in such a manner, that further escape is brought down to the safe level.
- (3) The substances that would have escaped into the work atmosphere before taking immediate steps as required in sub-paragraph (2), shall be rendered innocuous by diluting with air or water or any other suitable agent or by suitably treating the substances.
- (4) The level of concentration of toxic substances in the work atmosphere shall be monitored by suitable devices and shall not exceed the permissible levels specified in rule 91.

### **14. Control of dangerous chemical reactions**

Suitable provisions, such as automatic and or remote control arrangements, shall be made for controlling the effects of "dangerous chemical reactions". In the event of failure of control arrangements automatic flooding or blanketing or other effective arrangements shall come into operation.

### **15. Testing, examination, repair and maintenance of plant and equipment**

- (1) All parts of plant, equipment and machinery used in the process which in the likely event of their failure may give rise to an emergent situation shall be tested by a competent person before commencing process and retested at an interval of two years or after carrying out repairs to it. The competent person shall identify the parts of the



plant, equipment and machinery required to be tested as aforesaid and evolve a suitable testing procedures. In carrying out the test as mentioned above in respect of pressure vessels or reaction vessels the following precautions shall be observed, namely :

- (a) before the test is carried out, each vessel shall be thoroughly cleaned and examined externally, and as far as practicable, internally also for surface defects, corrosion and foreign matter. During the process of cleaning and removal of sludge, if any, all due precautions shall be taken against fire or explosion, if such sludge is of pyrophoric nature or contains spontaneously combustible chemicals;
  - (b) as soon as the test is completed, the vessel shall be thoroughly dried internally and shall be clearly stamped with the marks and figures indicating the person by whom testing has been done and the date of test ; and
  - (c) any vessel which fails to pass the test or which for any other reason is found to be unsafe for use shall be destroyed or rendered unusable under intimation to the Chief Inspector-cum-Facilitator.
- (2) All parts of plant, equipment, machinery which in the likely event of failure may give rise to an emergent situation shall be examined once in a month by a qualified person and tested by a competent person once in every six months.
  - (3) Records of testing and examination referred to in paragraphs (1) and (2) shall be maintained as long as that part of the plant, equipment and machinery are in use.
  - (4) All repair work including alteration, modification and addition to be carried out to the plant, equipment and machinery shall be done under the supervision of a responsible person who shall evolve a procedure to ensure safety and health of persons doing the work. When repairs or modification is done on pipelines and joints are required to be welded, but welding of joints shall be preferred. Wherever necessary, the responsible person shall regulate the aforesaid work through a 'permit to work system'.
  - (5) No machinery, plant or equipment shall be operated or maintained in such a manner as to cause risk of bodily Injury.

## **16. Staging**

- (1) All staging that is erected for the purpose of maintenance work or repair work or for work connected with entry into confined spaces and used in the processes included in Appendix 'A' shall be stable, rigid and constructed out of substantial material of adequate strength. Such staging shall conform to the respective Indian Standard Specifications.
- (2) Staging shall not be erected over any closed or open vessel unless the vessel is so constructed and ventilated to prevent exposure of persons working on the stages.
- (3) All the staging constructed for the purpose of this paragraph shall have appropriate access which are safe and shall be fitted with proper hand rails to a height of one meter and toe board.

## **17. Seating arrangements**

The seating arrangements provided for the operating personnel working in processes covered in Appendix 'A' shall be located in a safe manner as to prevent the risk of exposure to toxic, flammable and explosive substances evolved in the work environment in the course of manufacture or repair or maintenance, either due to failure of plant and equipment or due to the substances which are under pressure, escaping into the atmosphere.

## **18. Entry into or work in confined space**

- (1) The occupier of every factory to which the provision of this schedule apply, shall ensure the observance of the following precautions before permitting any person to

enter or work inside the confined spaces:

- (a) identify all confined spaces and the nature of hazards that are encountered in such spaces, normally or abnormally and arrange to develop the most appropriate safeguards for ensuring the safety and health of persons entering into or working inside, the confined spaces;
  - (b) regulate the entry or work inside the confined spaces through a 'permit to work system' which should include the safeguards so developed as required under sub-clause (a) above;
  - (c) before testing the confined space for entry into or work, the place shall be rendered safe by washing or cleaning with neutralizing agents or purging with steam or men gases and making adequate forced ventilation arrangements or such measure which will render the confined space safe;
  - (d) shall arrange to carry out such tests as are necessary for the purpose by a competent person and ensure that the confined space is safe for the persons to enter or work. Such testing shall be carried out as often as is necessary during the course of work to ensure its continued safety;
  - (e) shall arrange to educate and train the personnel who would be required to work in confined spaces about the hazards involved in the work. He shall also keep in readiness the appropriate and approved personal protective equipment including arrangements for rescue, resurrection and first aid, and shall arrange supervision of the work at all times by a responsible and knowledgeable person.
- (2) The Occupier shall maintain a log of all entry into or work in, confined spaces and such record shall contain the details of persons assigned for the work, the location of the work and such other details that would have a bearing on the safety and health of the persons assigned for this work. The log book so maintained shall be retained as long as the concerned workers are in service and produced to the Inspector-cum-Facilitator when demanded.

#### **19. Maintenance work, etc**

- (1) All the work connected with the maintenance of plants and equipment including cleaning of empty containers which have held hazardous substances used in the processes covered in this Schedule, shall be carried out under 'permit to work system' employing trained personnel and under the supervision of responsible person, having knowledge of the hazards and precautions required to deal with them.
- (2) Maintenance work shall be carried out in such a manner that there is no risk to persons in the vicinity or to persons who pass by. If necessary, the place of such work shall be cordoned off or the presence of unconnected persons effectively controlled.

#### **20. Permit to work system**

The permit to work system shall inter alia include the observance of the following precautions while carrying out any specified work to be subjected to the permit to work system

- (a) all work subject to the permit to work system shall be carried out under the supervision of a knowledgeable and responsible person;
- (b) all parts of plant or machinery or equipment on which permit to work system is carried out, shall remain isolated from other parts throughout the period of permit to work and the place of work including the parts of plant, machinery shall be rendered safe by cleaning, purging, washing, etc.;
- (c) all work subject to the permit to work system shall have pre-determined work procedures which integrate safety with the work. Such procedures shall be reviewed whenever any change occurs in material or equipment so that continued safety is ensured;

- (d) persons who are assigned to carry out the permit to work system shall be physically fit in all respects taking into consideration the demands and nature of the work before entering into the confined space. Such person shall be adequately informed about the correct work procedure as well as the precautions to be observed while carrying out the permit to work system;
- (e) adequate rescue arrangements wherever considered necessary and adequate first-aid, rescue and resurrection arrangements shall be available in good working condition near the place of work while carrying out the permit to work system, for use in emergency ;
- (f) appropriate and approved personal protective equipment shall be use while carrying out the 'permit to work system';
- (g) after completion of work subject to the 'permit to work system', the person responsible shall remove all the equipment and tools and restore to the original condition so as to prevent any danger while carrying out regular process.

### **21. Safety sampling personnel**

The occupier shall ensure the safety of persons assigned for collecting samples by instructing them on the safe procedures. Such personnel shall be provided with proper and approved personal protective equipment, if required.

### **22. Ventilation**

Adequate ventilation arrangements shall be provided and maintained at all times in the process area where dangerous or toxic or flammable or explosive substances could be evolved. These arrangements shall ensure that concentrations, which are either harmful or could result in explosion, are not permitted to be built up in the work environment.

### **23. Procedures for meeting emergencies**

- (1) The occupier of every factory carrying out the works covered in Appendix 'A', shall arrange to identify all types of possible emergencies that could occur in the processes during the course of work or while carrying out maintenance work or repair work. The emergencies so identified shall be reviewed every year.
- (2) The occupier shall formulate a detailed plan to meet all such identified emergencies including arrangements for summoning outside help for rescue and fire-fighting and arrangements for making available urgent medical facilities.
- (3) The occupier shall send the list of emergencies and the details of procedures and plans formulated to meet the emergencies to the Chief Inspector-cum-Facilitator.
- (4) The occupier shall arrange to install distinctive and recognizable warning arrangements to caution all persons inside the plant as well as the neighboring community, if necessary, to enable evacuation of persons and to enable the observance of emergency procedures by the persons who are assigned emergency duties. All concerned must be well informed about the warning arrangement and their meaning. The arrangement must be checked for its effectiveness every month.
- (5) Alternate power supply arrangements shall be made and inter-locked with the normal power supply. system so as to ensure constant supply of power to the facilities and equipment meant for compliance with requirements of paragraphs 10,11,12,13, 14,18,22 and this paragraph of Part II, Part III, Part IV and Part V of this Schedule.
- (6) The occupier shall arrange to suspend the further process work in a place where emergency is established and shall forthwith evacuate all persons in the area except workers who have been assigned emergency duties.
- (7) All the employees of the factory shall be trained about the action to be taken by them including evacuation procedures during emergencies.

- (8) All emergency procedures must be rehearsed every three months and deficiencies, if any, in the achievement of the objectives shall suitably be corrected.
- (9) The occupier shall arrange to have ten percent of the workers trained in the use of First-Aid Fire Fighting appliances and in the rendering of specific First-Aid measures taking into consideration the special hazards of the particular process.
- (10) The occupier shall furnish immediately on request the specific chemical identity of the hazardous substances to the treating physician when the information is needed to administer proper emergency or first-aid treatment to exposed persons.

#### **24. Danger due to effluents**

- (1) Adequate precautions shall be taken to prevent the mixing of effluents from different processes and operations which may cause dangerous or poisonous gases to be evolved
- (2) Effluents which contain or give rise in the presence of other effluents to poisonous gases shall be provided with independent drainage systems to ensure that they may be trapped and rendered safe

### **PART III**

#### **FIRE AND EXPLOSIONS RISKS**

##### **1. Source of ignition including lighting installation**

- (1) No internal combustion engine and no electric motor or other electrical equipment and fittings and fixtures capable of generating sparks or otherwise causing combustion or any other source of ignition or any naked light, shall be installed or permitted to be used in the process area where there could be fire and explosion hazards.
- (2) All hot exhaust pipes shall be installed outside a building and other hot pipes or hot surface or surfaces likely to become hot shall be suitably protected
- (3) The classification of work areas in terms of its hazard potential and the selection of electrical equipment or other equipment that could constitute a source of ignition shall be in accordance with the respective Indian Standard.
- (4) Where flammable atmosphere may be prevalent or could occur, the soles of footwear worn by workers shall have no metal on them, and the wheels of trucks or conveyers shall be conductive type.
- (5) All tools and appliances used for work in this area shall be of non-sparking type.
- (6) Smoking in process areas where there are risks of fire and explosion shall be prohibited, and warning notices in the language understood by majority of workers shall be posted in the factory prohibiting smoking in the specified areas.

##### **2. Static Electricity**

- (1) All machinery and plant, particularly pipe lines and belt drives, on which static charge is likely to accumulate, shall be effectively earthed. Receptacles for flammable liquids shall have metallic connections to the earthed supply tanks to prevent static sparking. Where necessary, humidity shall be regulated.
- (2) Mobile Tanker-wagons shall be earthed during filling and discharge, precautions shall be taken to ensure that earthing is effective before suck filling or discharge takes place.

##### **3. Lightning protection**

Lightning protection arrangement shall be fitted where necessary, and shall be maintained.

#### **4. Process heating**

The method of providing heat for a process likely to result in fire and explosion shall be as safe as possible and where the use of naked flame is necessary, the plant shall be so constructed as to prevent any escaping flammable gas, vapour, or dust coming into contact with the flame, or exhaust gases, or other sources likely to cause ignition. Wherever possible, the heating arrangement shall be automatically controlled at a pre-determined temperature below the danger temperature.

#### **5. Leakage of flammable liquids**

- (1) Provision shall be made to confine by means of suitable bund walls, dykes, sumps, etc., possible leakages from storage vessels containing flammable liquids.
- (2) Waste material in contact with flammable substances shall be disposed off suitably under the supervision of knowledgeable and responsible person.
- (3) Adequate and suitable fire fighting appliances shall be in-stalled in the vicinity of such vessels.

#### **6. Safety valves**

Every still and every closed vessel in which gas is evolved or into which gas is passed, and in which the pressure is liable to rise above the atmospheric pressure, shall have attached to it a pressure guage and a proper safety valve or other equally efficient means to relieve the pressure. These appliances shall be maintained in good condition.

#### **7. Installation of pipe lines, etc**

All pipe lines carrying flammable or explosive substances shall be protected from mechanical damage and shall be examined by a responsible person once in a week to detect any deterioration or defects, or accumulation of flammable or explosive substances, and record kept of any defects found and repairs made.

#### **8. Fire fighting system**

- (1) Every factory employing 500 or more persons and carrying out processes listed in Appendix 'A' shall provide
  - (a) Trained and responsible fire fighting squad so as to effectively handle the fire-fighting and life saving equipment in the event of fire or other emergency. Number of persons in this squad will necessarily depend upon the size of risk involved, but in no case shall be less than eight such trained persons to be available at any time. The squad shall consist of watch and ward personnel, fire pump man and departmental supervisors and operators trained in the operation of fire and emergency services.
  - (b) Squad leaders shall preferably be trained in a recognised Government institution and their usefulness enhanced by providing residence on the premises.
  - (c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.
- (2) A muster roll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each leader as well as displayed in prominent places so as to be easily available for reference in case of emergency.
- (3) The pump man shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all firefighting equipment in proper working order. Any defect coming to his notice shall be immediately brought to the notice of squad leader.
- (4) As far as is practicable, the fire pump room and the main gate(s) of the factory be

connected to all manufacturing or storing areas through telephone interlinked and placed in a convenient location near such areas.

- (5) Fire hydrant system shall be capable of supplying a minimum of 4,500 liters per minute at a pressure of not less than 7 kilograms per square cm.
- (6) Adequate provision of water supply for firefighting shall be made with static storage capacity of not less than 2 hours aggregate pumping.

#### **PART IV RISKS OF TOXIC SUBSTANCES**

##### **1. Leakage**

- (1) All plants shall be so designed and constructed as to prevent the escape of toxic substance. Where necessary, separate buildings, rooms, or protective structures shall be used for the dangerous stages of the process and the buildings shall be so designed as to localize any escape of toxic substances.
- (2) Catch pits, band walls, dykes, or other suitable safeguards shall be provided to restrict the serious effects of such leakages. Catch pits shall be placed below joints in pipelines where there is danger involved to maintenance and other workers from such leakage.

##### **2. Drainage**

Adequate drainage shall be provided and shall lead to collection tanks specifically provided for this purpose wherein deleterious material shall be neutralized, treated or otherwise rendered safe before it is discharged into public drains or sewers.

##### **3. Covering of vessels**

- (1) Every fixed vessel or structure containing any toxic substance and not so covered as to eliminate all reasonable risk of accidental contact of any portion of the body of a worker, shall be so constructed as to avoid physical contact.
- (2) Such vessel shall, unless its edge is atleast 90 centimeters above the adjoining ground or platform, be securely fenced to a height of atleast 90 centimeters above such adjoining ground or platform.
- (3) Where such vessels adjoin and the space between them, clear of any surrounding brick or other work is either less than 45 centimeters in width or is 45 or more centimeters in width, but is not securely fenced on both sides to a height of atleast 90 centimeters, secure barriers shall be so placed as to prevent passage between them:

Provided that sub-paragraph (2) of this paragraph shall not apply to --

- (a) saturators used in the manufacture of sulphate of ammonia ; and
- (b) that part of the sides of brine evaporating pans which require raking, drawing or filling.

##### **4. Continuous exhaust arrangement**

- (1) Any process evolving toxic vapour, gas, fume and substance shall have efficient continuous exhaust draught. Such arrangement shall be interlocked in the process control wherever possible.
- (2) In the event of failure of continuous exhaust arrangement, means shall be provided to automatically stop the process.

##### **5. Work bench**

All the work benches used in process involving the manipulation of toxic substances, shall be waded properly and shall be made of smooth impervious surface which shall be washed daily after the completion of work.

## **6. Waste disposal**

- (1) There shall be provided a suitable receptacle made of non-absorbable material with a tightly fitting cover for depositing waste material soiled with toxic substances and the contents of such saturators shall be destroyed by burning or using other suitable receptacle methods under the supervision of a responsible person.
- (2) During the course of manufacture, whenever any batch or intermediate products having toxicity is rejected on considerations of quality, sufficient precautions shall be taken to render them innocuous or otherwise treat them or inactivate them, before disposal
- (3) The empty containers of toxic substances shall be cleaned thoroughly before disposal under the supervision of a responsible person.

## **PART V**

### **SPECIAL PROVISIONS**

#### **1. Special precautions for Nitro or Amino Processes**

- (1) Unless the crystallized nitro or amino substances or any of its liquor is broken or agitated in a completely enclosed process so as not to give rise to dust or fume, such process shall be carried on under an efficient exhaust draught or by adopting any other suitable means in such a manner as to prevent the escape of dust or fume in the working atmosphere.
- (2) No part of the plant or equipment or implements which was in contact with nitro or amino compounds shall be repaired, or handled unless they have been emptied and thoroughly cleaned and decontaminated.
- (3) Filling of containers with nitro or amino compounds shall be done only by using a suitable scoop to avoid physical contact and the drying of the containers in the stove shall be done in such a manner that the hot and contaminated air from the stove is not drawn into the work room.
- (4) Processes involving the steaming into or around any vessel containing nitro or amino compounds or its raw materials shall be carried out in such a manner that the steam or vapour is effectively prevented to be blown back into the working atmosphere.
- (5) Suitable antidotes such as methylene blue injections shall always be available at designated places of work for use during emergency involving the poisoning with nitro or amino compounds.

#### **2. Special precautions for chrome processes**

- (1) Grinding and sieving of raw materials in chrome processes shall be carried on in such a manner and under such condition as to secure effective separation from any other processes and under an efficient exhaust draught.
- (2) There shall be washing facilities located very near to places where wet chrome processes such as leaching, acidification, sulphate settling, evaporation, crystallization, centrifugation or packing are carried out, to enable quick washing of affected parts of body with running water.
- (3) Weekly inspection of hand and face of all persons employed in chrome processes shall be done by a qualified nurse and record of such inspections shall be maintained in a form approved by the Chief Inspector-cum-Facilitator.
- (4) There shall be always available at designated places of work, suitable ointment such as glycerin, Vaseline, etc., and water proof plaster in a separate box readily accessible to the workers so as to protect against perforation of nasal septum.

#### **3. Special precautions for processes carried out in all glass vessels**

- (1) Processes and chemical reactions such as manufacture of vinyl chloride, benzyl

chloride, etc., which are required to be carried out in all glass vessels shall have suitable means like substantial wire mesh covering to protect persons working nearby in the event of breakage of glass vessel.

- (2) Any spillage or emission of vapour from all glass vessel due to breakage, shall be immediately inactivated or rendered innocuous by suitable means such as dilution with water or suitable solvents so as to avoid the risk of fire or explosion or health hazards.

#### **4. Special precautions for processes involving chlorate manufacture**

- (1) Crystallization, grinding or packing of chlorate shall not be done in a place used for any other purpose and such places shall have hard, smooth and impervious surface made of non-combustible material. The place shall be thoroughly cleaned daily.
- (2) The personal protective equipment like overall, etc., provided for the chlorate workers shall not be taken from the place of work and they shall be thoroughly cleaned daily.
- (3) Adequate quantity of water shall be available near the place of chlorate process for use during fire emergency.
- (4) Wooden vessels shall not be used for the crystallization of chlorate or to contain crystallized ground chlorate.

#### **5. Special precautions in the use of plant and equipment made from reinforced plastics**

- (1) All plant and equipments shall conform to appropriate Indian or any other National Standard.
- (2) Care shall be taken during storage, transport, handling and installation of plant and equipments to avoid accidental damage.
- (3) All plant and equipments shall be installed in such a way as to ensure that loads are distributed as intended in design or as per the recommendations of the manufacturers.
- (4) All pipe work shall be supported so that total loads local to the branches on the vessel or tank do not exceed their design values.
- (5) After erection, all plant and equipments shall be subjected to a pressure test followed by a thorough examination by a competent person. The test and examination shall be as per relevant standard. A certificate of test and examination by competent person shall be obtained and kept available at site.
- (6) All plant and equipments shall be subjected to periodical test and examination and record maintained as per paragraph 15 in Part II of this schedule.
- (7) Plant and equipments during their use shall not be subjected to over filling or overloading beyond rated capacity.

#### **6. Special precautions for fumigation process:**

The Occupier shall ensure the health and safety of the workers required to enter into the confined space where Fumigation process is carried on, which includes personal protective equipments, supervision, testing procedures to ensure the suitability of the workspace for human health and safety.

### **PART VI**

#### **MEDICAL REQUIREMENTS**

##### **1. Decontamination facilities**

In all places where toxic substances are used in processes listed in Appendix 'A', the following provisions shall be made to meet an emergency:



- (a) Fully equipped first-aid box.
- (b) Readily accessible means of drenching with water persons, part of body of persons, and clothing of persons who have been contaminated with such toxic and corrosive substances, and such means shall be as shown in the table below:

Number of persons employed Number at any time	Number of drenching showers
Upto 50 persons	2
between 51 to 100	3
101 to 200	3+ 1 for every 50 persons thereafter
201 to 400	5+ 1 for every 100 persons thereafter
401 and above	7+ 1 for every 200 persons thereafter

- (c) a sufficient number of eye wash bottles filled with distilled water or suitable liquid, kept in boxes or cupboards conveniently situated and clearly indicated by a distinctive sign which shall be visible at all times.

## 2. Occupational health centre

In all the factories carrying out processes covered in Appendix 'A' there shall be provided and maintained in good order an occupational health centre with facilities as per scale laid down hereunder

- (1) For factories employing up to 50 workers
  - (a) the services of a qualified medical practitioner hereinafter known as Factory Medical Officer, available on retainer ship basis, in his notified clinic near to the factory for seeking medical help during emergency. He will also carry out the pre-employment and periodical medical examinations as stipulated in paragraph 4 of this part.
  - (b) A minimum of five persons trained in first-aid procedures, amongst whom atleast one shall always be available during the working period
  - (c) A fully equipped first-aid box.
- (2) For factories employing 51 to 200 workers
  - (a) The occupational health centre shall have a room having a minimum floor area of 1.5 sq. m. with floors and walls made of smooth, hard and impervious surface and shall be adequately illuminated, ventilated and equipped.
  - (b) A part-time Factory Medical Officer will be in overall charge of the Centre who shall visit the factory minimum twice in a week and whose services shall be readily available during emergencies.
  - (c) There shall be one qualified and trained dresser-Cum-compounder on duty throughout the working period.
  - (d) A fully equipped first aid box.
- (3) For factories employing above 200 workers
  - (a) There shall be one full-time factory Medical Officer for factories employing up to 500 workers and one more Medical Officer for every 1,000 workers or part thereof.
  - (b) The occupational health centre in this case shall have a minimum of 2 rooms each having a minimum floor area of 15 square meter with floors and walls made of smooth, hard and impervious surface and shall be adequately

illuminated, ventilated and equipped.

- (c) There shall be one trained nurse, one dresser-Cum-compounder and one sweeper-cum-ward boy throughout the working period.
- (d) The occupational Health Centre in this case shall be suitably equipped to manage medical emergencies.

### **3. Ambulance Van**

- (1) In every factory carrying out processes covered in Appendix 'A', there shall be provided and maintained in good condition, a suitably constructed and fully equipped ambulance van as per Appendix 'C' manned by a fulltime driver-cum-mechanic and a helper, trained in first-aid for the purposes of transportation of serious cases of accidents or sickness unless arrangements for procuring such facility at short notice during emergencies have been made with the nearby hospital or other places. The ambulance van shall not be used for any purpose other than the purpose stipulated herein and will always be available near the occupational health centre.
- (2) The relaxation to procure Ambulance Van from nearby places provided for in subparagraph (1) above will not be applicable to factories employing more than 200 workers.

### **4. Medical examination**

- (1) Workers employed in processes covered in Appendix 'A' shall be medically examined by a Medical Practitioner in the following manner:
  - (a) Once before employment, to ascertain physical suitability of the person to do the particular job;
  - (b) Once in a period of 6 months, to ascertain the health status of the workers, which shall include respiratory evaluation ; and
  - (c) The details of pre-employment and periodical medical examinations carried out as aforesaid shall be recorded in the Health register in **Form XXXIII**.
- (2) Any finding of the Medical Practitioner revealing any abnormality or unsuitability of any person employed in the process shall immediately be reported to the Medical Officer who shall in turn, examine the concerned workers and communicate his findings within 30 days. If the Medical Officer is of the opinion that the person so examined is required to be suspended from the process for health protection he will direct the occupier accordingly, who shall not employ the said worker in the same process. However, the person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer in which case the person affected shall be suitably rehabilitated:

Provided that the Medical Officer on his own may examine any other worker whom he feels necessary to be examined for ascertaining the suitability of his employment in the process covered in Appendix 'A' or for ascertaining the health status of any other worker and his opinion shall be final.

- (3) No person shall be newly appointed without the Certificate of Fitness in **Form XXXIV** granted by the Medical Practitioner. If the Medical Practitioner declares a person unfit for being appointed to work in the process covered in Appendix 'A', such person shall have a right of appeal to the Medical Officer, whose opinion shall be final in this register.
- (4) The worker suspended from the process owing to the circumstances covered in subparagraph (2) shall be employed again in the same process only after obtaining the fitness certificate from the Medical Officer and after making entries to that effect in the health register.

**PART VII**  
**ADDITIONAL WELFARE AMENITIES**

**1. Washing facilities**

- (1) There shall be provided and maintained in every factory for the use of all the workers taps for washing, at the rate of one tap for every 15 persons including liquid soap in a container with tilting arrangements and nail brushes or other suitable means for effective cleaning. Such facilities shall be conveniently accessible and shall be kept in a clean and hygienic condition.
- (2) If washing facilities as required above are provided for women, such facilities shall be separate for them and adequate privacy at all times shall be ensured in such facilities.

**2. Mess-room facilities**

- (1) The occupier of all the factories carrying out processes covered in Appendix 'A' and employing 50 workers or more shall provide for all the workers working in a shift, mess room facilities which are well ventilated and provided with tables and sitting facilities along with the provision of cold and hygienic drinking water facilities.
- (2) Such facilities shall include suitable arrangements for cleaning and washing and shall be maintained in a clean and hygienic condition.

**3. Cloak room facilities**

- (1) The occupier of every factory carrying out any process covered in appendix 'A' shall provide for all the workers employed in the process, cloak room facilities with lockers. Each worker shall be provided with two lockers, one for work clothing and another separately for personal clothing and the lockers should be such as to enable the keeping of the clothing in a hanging position.
- (2) The cloak room facilities so provided in pursuance of sub-paragraph (1) shall be located as far as possible near to the facilities provided for washing in pursuance of paragraph 1 (1). If it is not possible to locate the washing facilities, the cloak room facilities shall have adequate and suitable arrangements for cleaning and washing.

**4. Special bathing facilities**

- (1) The occupier of any factory carrying out the process covered under Appendix 'B'. shall provide special bathing facilities for all the workers employed and such facilities shall be provided at the rate of 1 for 25 workers and part thereof, and shall be maintained in a clean and hygienic condition.
- (2) The occupier shall insist all the workers employed in the processes covered in Appendix 'B' to take bath after the completion of the day's or shift work using the bathing facilities so provided and shall also effectively prevent such of those workers taking bath in any place other than the bathing facilities.
- (3) Notwithstanding anything contained in sub-paragraph (1) above, the Chief Inspector-cum-Facilitator may require in writing the occupier of any factory carrying out any other process for which in his opinion bathing facilities are essential from the health point of view, to provide special bathing facilities.

**PART VIII**

**1. Duties of workers**

- (1) Every worker employed in the processes covered in Appendix 'A' and Appendix ' B' shall not make safety device or appliance or any guarding or fencing arrangement, inoperative or defective and shall report the defective condition of the aforesaid arrangement as soon as he is aware of any such defect.
- (2) Before commencing any work, all workers employed in processes covered in Appendix

- 'A' shall check their work place as well as the machinery, equipment or appliance used in the processes and report any malfunction or defect immediately to the supervisor or any responsible person of the management.
- (3) All workers shall co operate in all respects with the management while carrying out any work or any emergency duty assigned to them in pursuance of this schedule and shall always use all the personal protective equipments issued to them in a careful manner.
  - (4) All workers employed in the processes covered in Appendix 'A' or Appendix 'B' shall not smoke in the process area or storage area. If special facilities are provided by the management, only such facilities should be used:
  - (5) All workers employed in the processes covered in Appendix 'A' shall not remain in unauthorized place or carry out unauthorized work or improvise any arrangements or adopt short cut method or misuse any of the facilities provided in pursuance of the Schedule, in such a manner as to cause risk to themselves as well as or to others employed.
  - (6) The workers shall not refuse undergoing medical examination as required under these rules.

#### **APPENDIX 'A'**

Any works or that part of works in which

- (i) the manufacture, manipulation or recovery of any of the following is carried on :
  - (i) Sodium, potassium, iron, aluminium, cobalt, nickel, copper, arsenic, antimony, chromium, zinc, selenium, magnesium, cadmium, beryllium and their organic and inorganic salts, alloys, oxides and hydroxides;
  - (ii) ammonia, ammonium hydroxide and salts of ammonium;
  - (iii) the organic or inorganic compounds of sulphurous, sulphuric, nitric, nitrous, hydrochloric, hydrofluoric, hydroiodic, hydrosulphuric, hydrobromic, boric ;
  - (iv) cyanogen compounds, cyanide compounds, cyanate compounds;
  - (v) Phosphorous and its compounds, other than organic phosphorous insecticides;
  - (vi) chlorine.
- (ii) Hydrogen sulphide is evolved by the decomposition of metallic sulphides, or hydrogen sulphide is used in the production of such sulphides;
- (iii) bleaching powder is manufactured or chlorine gas is produced in chloroalkali plants;
- (iv)
  - (i) gas tar or coal tar or bitumen or shale oil, asphalt or any residue of such tar is distilled or is used in any process of chemicals manufacture;
  - (ii) tar based synthetic colouring matters or their intermediates are produced;
- (v) nitric acid is used in the manufacture of nitro compounds;
- (vi) explosives are produced with the use of nitro compounds;
- (vii) aliphatic or aromatic compounds or their metallic and non-metallic derivatives or substituted derivatives, such as chloroform, ethylene, glycol, formaldehyde, benzyl, chloride, phenol, methyl ethyl ketone peroxide, cobalt carbonyl, tungsten carbide etc, are manufactured, manipulated or recovered

#### **APPENDIX 'B'**

#### **CONCERNING SPECIAL BATHING ACCOMMODATION IN PURSUANCE OF PARAGRAPH 4 OF PART IV**

1. Nitro or amino processes.
2. All chrome processes.
3. Processes of distilling gas or coal tar or processes of chemical manufacture in which tar is

used.

4. Processes involving manufacture, manipulation, handling or recovery of cyanogen compound, cyanide compound, cyanate compounds.
5. Processes involving manufacture of bleaching powder or production of chlorine gas in chloro alkali plants.
6. Manufacture, manipulation or recovery of nickel and its compounds.
7. All processes involving the manufacture, manipulation or recovery of aliphatic or aromatic compounds or their derivatives or substituted derivatives.

## **APPENDIX 'C'**

### **Ambulance**

Ambulance should have the following equipments

#### **General**

- A wheeled stretcher with folding and adjusting devices ; Head of the stretcher must be capable of being tilted upwards;
- Fixed suction unit with equipments;
- Fixed oxygen supply with equipments;
- Pillow with case;
- Sheets;
- Blankets;
- Towels;
- Emesis bag;
- Bed pan;
- Urinal;
- Glass.

#### **Safety equipment**

- Flares with life of 30 minutes;
- Flood lights;
- Flash lights;
- Fire extinguisher dry powder type;
- Insulated gauntlets

### **Emergency care equipments**

#### **Resuscitation**

- Portable suction unit;
- Portable oxygen unit;
- Bag valve-mask, hand operated artificial ventilation unit;
- Airways;
- Mouth gags;
- Tracheostomy adaptors;
- Short spine board;
- I.V. Fluids with administration unit;
- B.P. Manometer;
- Cugg;
- Stethoscope

**Immobilization**

- Long and short padded boards ;
- Wire ladder splints ;
- Triangular bandage;
- Long and short spine boards.

**Dressings**

- Gauze pads — 4 inches x 4 inches;
- Universal dressing 10 inches x 36 inches;
- Roll of aluminum foils;
- Soft roller bandages 6 inches x 5 yards;
- Adhesive tape in 3 inches roll;
- Safety pins;
- Bandage sheets;
- Burn sheet

**Poisoning**

- Syrup of Ipecac and Activated charcoal Pre-packeted in doses
- Snake bite kit ;
- Drinking water.

**Emergency medicines**

- As per requirement (under the advice of Medical Officer only).

**SCHEDULE-AD**

(See rule 96 (2) & (4))

**MANUFACTURE OF DICHROMATES****(1) Application**

The provisions of this schedule shall apply to all factories or parts of factories in which the manufacture of dichromates is carried on.

**(2) Provision of protective clothing**

The occupier shall provide and maintain in good condition, loose-fitting rubber gloves of suitable length for the use of all persons coming into contact with chrome solution suitable protective clothing, and also for persons handling the crystals or Immersing their hands in chrome solutions or handling textile materials saturated with chrome solution.

**(3) First aid boxes or cupboards**

The occupier shall provide in readily accessible positions a sufficient number of special "First-Aid" boxes or cupboards.

Each box or cupboard shall be distinctly marked, and shall contain, besides any other medical appliances or requisites, a supply of:

- (i) Collodion and Brushes.
- (ii) Impermeable Waterproof Plaster
- (iii) Ointment, Lint, Bandages and Scissors.
- (iv) A 2 percent alcoholic solution of Iodine.

Nothing except appliance or requisites for First-Aid shall be kept in a "First-Aid" box or

cupboard.

Each "First-Aid" box or cupboard shall be placed under the charge of a person who possesses the certificate granted by the St. John Ambulance Association, for rendering first-aid and such person shall be readily available during working hours of the factory.

A notice or notices shall be affixed in every workroom stating the name of the person in charge of a box or cupboard provided in respect of that room.

#### **(4) Cautionary notice and inspection of workmen**

The occupier shall see that the Official Cautionary Notice as to the effects of chrome on the skin is kept posted up in the works and shall arrange for an inspection of the fingers and toes of all persons coming into contact With chrome solutions to be made at the works twice a week by the person in charge of the "First-Aid" box or cupboard.

If any person whose work brings him into contact with chrome solution or crystals shows a tendency to develop, or is known to be susceptible to chrome eczema he shall, if practicable, be transferred to other work not exposing him to such contact.

#### **(5) Accommodation for clothing**

The occupier shall provide and maintain for the use of all the persons employed suitable accommodation of clothing, put off during working hours, with adequate arrangements for drying the clothing, if wet.

The accommodation so provided shall be placed in the charge of an official not lower in rank than a member of the supervisory staff and shall always be kept dean.

#### **(6) Provision and maintenance of mess-rooms**

The occupier shall provide and maintain for the use of all the persons employed and remaining on the premises during the meal intervals a suitable mess-room, which shall be furnished as follows:

- a. sufficient tables and chairs or benches with back-rests;
- b. adequate means of warming food and boiling water;
- c. suitable facilities for washing, comprising a sufficient supply of clean towels, soap and warm water.

#### **(7) Processes relating to noxious dust, fume, etc.**

Processes that give rise to noxious dust, fume, vapour or mist shall be isolated from others and shall either be totally enclosed or provided with hoods and suitable exhaust ventilation.

#### **(8) Operations which set free vapors containing particles of chromium**

The operations which set free vapors containing particles of chromium are -

- (i) fusing of raw materials ;
- (ii) dyeing the melted mass before cooling ; and
- (iii) concentration and evaporation methods to obtain crystals of bichromates;

The operations referred to in the first paragraph shall be carried out by

- (a) using a closed apparatus furnished with efficient exhaust, and
- (b) using an automatic system to eliminate manual handling.

#### **(9) Collection of roast batch**

A separate space shall be set apart to collect the "roast batch" when it is drawn out from the furnace.

If the cooled "roast batch" has to be transported, it shall be done in covered receptacles.

**(10) Processes relating to solution at temperature higher than 50°C**

The following processes, where solutions at temperature higher than 50°C are carried out shall be provided with exhaust ventilating cowls to carry away the vapors:

- (i) Vats for lixiviation
- (ii) Evaporating tanks.
- (iii) Acidifying vats.

**(11) Receptacles containing corrosive liquids**

Receptacles containing corrosive liquids shall be effectively dosed to prevent spillage of solutions.

**(12) Circulation of salines**

The circulation of salines shall be carried out in a water-tight system of pipes.

**(13) Dusty operations**

The following dusty operations shall be carried out under exhaust ventilation or in separate rooms with adequate ventilation:

- (i) Grinding of raw materials;
- (ii) emptying of containers;
- (iii) furnace cleaning and withdrawal of roast ;
- (iv) sifting of ingredients;
- (v) mixing of ingredients ;
- (vi) drying of crystals ; and
- (vii) packing of products.

**(14) Provision of respiratory protection**

All workmen shall be provided with efficient respiratory protection.

**(15) Maintenance and supervision of protective equipment**

Proper maintenance and supervision of all protective clothing equipment shall be provided.

**(16) Collection of waste materials**

All waste materials shall be collected in tanks or store-houses and protected from rain so that the soil may not be contaminated.

**(17) Cautionary notices**

Cautionary notices as to the dangers associated with "Chromates" shall be conspicuously displayed in the factory where they may be easily and conveniently read by the workers.

**(18) Examination of workmen**

The worker shall be examined daily to see that they do not have any lesions of the skin.

**(19) Examination of workmen by the Medical Officer**

Every workman shall be examined once in a month by the Medical Practitioner and the result entered in the Health Register in **Form No. XXXIII.**



**(20) Supply of protective ointment or cream**

Protective ointment or cream for application on limbs and in the nose shall be supplied to all workers.

**(21) Provision of washable working clothes and washing facilities**

All workmen shall be provided with washable working clothes; kept in good order.

Adequate provision of washing facilities shall also be provided.

**(22) Maintenance of tools**

All tools issued to the maintenance staff shall be washed daily and kept clean. No fee or charge shall be realized from any worker for this purpose.

**(23) Provision of protective footwear**

All workers on furnaces shall be provided with protective footwear such as wooden sandals.

**SCHEDULE-AE**

**(See rule 96 (2) & (4))**

**COMPRESSION OF OXYGEN AND HYDROGEN PRODUCED BY THE ELECTROLYSIS OF WATER**

1. The room in which electrolyser plant is installed shall be separate from the plant for storing and compressing the oxygen and hydrogen and also the electric generator room.
2. The purity of oxygen and hydrogen shall be tested by a competent person atleast once in every shift at the following points
  - (i) in the electrolysis room;
  - (ii) at the gas-holder inlet ; and
  - (iii) at the suction end of the compressor.

The purity figures shall be entered in the register and signed by the persons carrying out such tests:

Provided, however, that if the electrolyser plant is fitted with automatic recorded to purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of the gases is tested at the suction end of the compressor only.

3. The oxygen and hydrogen gases shall not be compressed if their purity as determined under clause 2 above falls below 98 percent at any time.

3-A. The bell of any gas-holder shall not be permitted to go within 30 cms of its lowest position when empty and a limit switch shall be fitted to the gas-holder in such a manner as to switch off the compressor motor when this limit is reached.

4. In addition to the limit switch in the gas-holder, a sensitive negative pressure switch shall be provided in, or adjacent to the suction main for hydrogen, close to the gas-holder and between the gas-holder and the hydrogen compressor to switch off the compressor motor in the event of the gas-holder being emptied to the extent as to cause vacuum.
5. The water and caustic soda and caustic potash used for making electrolytes shall be of standards suitable for electrolysis.
6. Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude the possibility of wrong connections leading to the reversal of polarity and in addition an automatic device shall be provided to cut off power in the event of reversal of polarity owing to wrong

connections either at the switch board or at the electric generator terminals.

7. Oxygen and hydrogen gas pipes shall be painted with distinguishing colors. Whenever an hydrogen pipe is opened for repairs or any other work, on re-connection the pipe shall be purged of &I air before hydrogen is allowed to pass through that pipe :
8. Provided that after repairs, hydrogen pipes shall preferably be purged by an inert gas like nitrogen, whenever possible, before introducing hydrogen for final purging.
9. All electrical wiring and apparatus in the electrolyser tooth and hydrogen compression room shall be of flame-proof construction or enclosed in flame-proof fittings and no naked light or flame shall be allowed to be taken either in the electrolyser room or where compression and filling of the gases is carried on and such warning notices shall be exhibited in prominent places.
10. No part of the electrolyser plant and the gas-holders and compressor shall be subjected to welding, bracing, soldering or cutting until steps have been taken to remove any explosive substance from that part and render the part safe for such operations and after the completion of such operation no explosive substance shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.
11. No work of operation, repair or maintenance shall be undertaken except under the direct supervision of a person who by his training, experience and knowledge of the necessary precautions against risk of explosion is competent to supervise such work. No electric generator after erection or repairs shall be switched on to the electrolyzers unless the same is certified by the competent persons under whose direct supervision erection or repairs are carried on to be in a safe condition and the terminals have been checked for The polarity as required by clause 7.
12. Every part of the electrolyser plant and the gas-holders and compressor shall have a regular schedule of overhaul and checking and every defect noticed shall be rectified forthwith.

#### **SCHEDULE-AF**

**(See rule 96 (2) & (4))**

#### **MANIPULATION OF STONE OR ANY OTHER MATERIAL CONTAINING FREE SILICA**

##### **1. Application:-**

This Schedule shall apply to all factories or parts of factories in which manipulation of stone or any other material containing free silica is carried on. This shall include the manufacturing processes pertaining to Stone Crushers, Gem and Jewellery, Slate Pencil Making, Agate Industry, Cement Industry, Pottery and Glass Manufacturing.

##### **2. Definitions:-** For the purpose of this Schedule -

- (a) "manipulation" means crushing, breaking, chipping, dressing, grinding, sieving, mixing, grading or handling of stone or any other material containing free silica or any other operation involving such stone or material;
- (b) "stone or any other material containing free silica" means a stone or any other solid material containing not less than 5 percent by weight of free silica.

##### **3. Preventive Control Measures:—**

No manipulation shall be carried out in a factory or part of a factory unless the following preventive control measures are adopted, namely:-

##### **(1) Engineering Control Measures:**

##### **(a) Wet Methods:**

- (i) Airborne Silica Dust should be minimized or suppressed by applying water to the process or cleanup;
  - (ii) Water should be provided for drilling or sawing of concrete or masonry,
- (b) **Ventilation:**
- (i) An effective Local exhaust system should be provided and maintained to control/remove silica dust from industrial processes.
  - (ii) Dilution / ventilation may be used to reduce free silica dust concentration to below the permissible limits in large areas.
  - (iii) Dust collectors / High Efficiency Particle Air filter (HEPA) should be set up so that dust shall be removed from the source and all transfer points to prevent contaminating work areas.
  - (iv) Ventilation systems should be kept in good working conditions.
- (c) **Isolation:**
- (i) Containment methods should be used while carrying out sand blasting.
  - (ii) Cabins of vehicles or machinery cutting and drilling that might contain free silica should be enclosed and sealed.
- (d) **Dust Control:**
- (i) Vacuum System with High Efficiency Particle Air (HEPA) filter shall be used to remove dust from work areas and at all transfer points.
  - (ii) The belt conveyors transferring crushed material shall be totally enclosed throughout its length.

Provided that such control measures as above said are not necessary if the process or operation itself is such that the level of dust created and prevailing does not exceed the permissible limit of exposure specified in Rule 91.

**(2) Medical Control Measures:**

- (1) The occupier of every factory in which a worker employed in the processes specified in paragraph 1, shall ensure that every worker employed be examined by a Medical officer within fifteen days of his first employment. Such medical examination shall include pulmonary function test and chest X ray -Posterior Anterior (PA) view to be compared with standard International Labour Organisation (I.L.O)Radiographs on Pneumoconiosis which shall be read by a radiologist specialized / trained in the said field. No worker shall be allowed to work after fifteen days of his first employment in the factory unless certified fit for such employment by the Medical officer.
- (2) Every worker employed in the said processes shall be re-examined by a Medical officer atleast once in every twelve months. Such re-examination shall, wherever the Medical officer considers appropriate, include the test as specified in sub-paragraph (1) that is, pulmonary function test except chest X-ray - Posterior Anterior (PA) view to be compared with standard International Labour Organisation Radiographs on Pneumoconiosis which shall be read by a radiologist specialized / trained in the field of reading International Labour Organisation Radiographs on Pneumoconiosis and the chest X-ray which shall be carried out atleast once in three years.
- (3) Every worker employed in any of the aforesaid processes on the date on which the schedule comes into force shall be radiological examined by the qualified Radiologist at the cost of the occupier using a standard size X-ray plates and the power of the X-ray machine shall be more than 300 milli ampere (mA) such radiological examination shall be examined as stated in sub-paragraph-1.The report of such X-ray shall be submitted to the Medical officer for within three months of the said date.
- (4) The Medical officer after examining a worker, shall issue a Certificate of Fitness in **Form XXXIV**. The record of re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Occupier of the factory. The record of each examination carried out under sub-paragraphs

- (1) and (2), including the nature and the results of the tests shall also be entered by the medical officer in a Health register in **Form XXXIII**. The certificate of Fitness and the Health register shall be kept readily available for inspection by the Inspector-cum-Facilitator and produced on demand.
- (5) If at any time the Medical officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said Certificate and the health register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the processes shall be provided with alternate placement facilities unless he fully is incapacitated in the opinion of the Medical officer, in which case the person affected shall be suitably rehabilitated
- (6) No person who has been found unfit to work as said in sub- paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Medical officer, after further examination, again certifies him fit for employment in those processes.
- (7) If a worker already in employment and declared unfit by the Medical officer shall not be allowed to work on any of the processes specified in paragraph 1, unless he has been examined again along with standard size chest X-ray plate from a qualified Radiologist and such Radiological examination shall be examined as stated in sub-paragraph 1, at the cost of the occupier and has been certified to be fit to work on the said processes again.
- (8) For the purpose of medical supervision by the Medical practitioner so appointed by the occupier shall be provided for his exclusive use a room in the factory premises which shall be properly cleaned, adequately lighted ventilated and furnished with a screen, a table with office stationery, chairs and other facilities and other instruments including X-ray arrangements for such examinations and such other equipments as may be prescribed by the Chief Inspector-cum-Facilitator for time to time. The medical practitioner so appointed shall perform the following duties.
- (a) maintain health register in **Form XXXIII**;
  - (b) undertake medical supervision of persons employed in the factory;
  - (c) look after health, education and rehabilitation of sick, injured or affected workers;
  - (d) carry out inspection of work rooms where dangerous operations are carried out and advise the management of the measures to be adopted for the protection of health of the workers employed therein.
- (9) The Health Records of the workers exposed to silicosis, shall be maintained by the Occupier and kept up to a minimum period of 40 years from the beginning of the employment or 15 years after retirement or cessation of the employment, whichever is later and shall be accessible to workers concerned or their representatives.
- (10) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a Health register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator and produce on demand.

### **(3) Administrative Control Measures:**

#### **(a) Work place / Environment Monitoring:**

The occupier to ensure work place / environment monitoring to be performed to determine magnitude of exposure / concentration to evaluate engineering controls, selecting respiratory protection, work practices and the need for medical surveillance.

- (i) Exposure / concentration measurements should be made in the Workers' actual breathing zone.
- (ii) Total sampling time shall be atleast seven hours.

- (iii) Work place / Environment Monitoring shall be repeated quarterly.
- (iv) The report of dust sampling by occupier shall be made available to the public.

**(b) Training / Awareness:** Workers shall be trained in the following:-

- (i) Health effects of free silica dust exposure.
- (ii) Operations and material that produce free silica dust hazards.
- (iii) Engineering controls and work practice controls that reduce dust concentration.
- (iv) The importance of good housekeeping and cleanliness.
- (v) Proper use of personal protective equipment such as respirators etc.
- (vi) Personal hygiene practices to reduce exposure.

**(c) Maintenance of floors:**

- (i) All floors or places where fine dust is likely to settle on and whereon any person has to work or pass shall be of impervious material and maintained in such condition that they can be thoroughly cleaned by a moist method or any other method which would prevent dust being airborne in the process of cleaning once atleast during each shift.
- (ii) For this purpose dry sweeping or compressed air shall be used for cleanup of dust or wet methods or vacuum system with a High Efficiency Particle Air (HEPA) filter shall be used.
- (iii) Dust on over head ledges and equipment should be removed before it becomes air borne due to vibration traffic and random air current.

**(d) Change room and washing facilities:**

- (i) Washing and bathing facilities shall be conveniently located at a place easily accessible to the workers.
- (ii) Cloak room with individual lockers shall be provided for workers to store uncontaminated clothing.
- (iii) Workers shall take bath and change the work clothes before they leave the work site.
- (iv) Work clothes shall not be cleaned by blowing or shaking.
- (v) Eating/lunch areas shall be located away from exposed areas.

**(e) Display of Notices:**

- (i) Warning signs / Posters shall be displayed conspicuously in a prominent place.
- (ii) The Warning signs / Poster shall contain the Hazards and precautions to be taken.
- (iii) The display of notice shall be in the local language and also in the language understood by the majority of the workers.

**(f) Personal Protective Equipment:**

The occupier of the every factory to which this schedule apply shall provide the following Personal Protective Equipments (PPEs) as per relevant National Standards or International Standards and as applicable to a given work place:-

- (i) Dust respirator
- (ii) High Efficiency Particle Air (HEPA) filter respirator or fume respirator.
- (iii) High Efficiency Particle Air (HEPA) filter respirator with full face piece.
- (iv) Self contained breathing apparatus ((SCBA)
- (v) Supplied air respirator with a full face piece, helmet or hood.
- (vi) Self contained breathing apparatus ((SCBA) with full face piece.
- (vii) Powered air purifying respirator with a High Efficiency Particle Air (HEPA) filter.

## **SCHEDULE-AG**

**(See rule 96 (2) & (4))**

### **HANDLING AND PROCESSING OF ASBESTOS, MANUFACTURE OF ANY ARTICLE OR SUBSTANCE OF ASBESTOS AND ANY OTHER PROCESS OF MANUFACTURE OR OTHERWISE IN WHICH ASBESTOS IS USED IN ANY FORM.**

#### **1. Application:-**

**Application:-** This schedule shall apply to all factories or parts of factories in which any of the following processes is carried on, namely—

- a. breaking, crushing, disintegrating, opening, grinding, mixing or sieving of asbestos and any other processes involving handling and manipulation of asbestos incidental thereto;
- b. all processes in the manufacture of asbestos textiles including preparatory and finishing processes;
- c. making of insulation slabs or sections, composed wholly or partly of asbestos and processes incidental thereto;
- d. making or repairing of insulation mattresses, composed wholly or partly of asbestos and processes incidental thereto;
- e. manufacture of asbestos cardboard and paper;
- f. manufacture of asbestos or cement goods;
- g. application of asbestos by spray method;
- h. sawing, grinding, turning, abrading and polishing in the dry state or articles composed wholly or partly of asbestos; and
- i. cleaning of any room, vessel, chamber fixture or appliances for the collection of asbestos dust; and
- j. any other processes in which asbestos dust is given off into the work environment.

#### **2. Definitions:-** For the purpose of this Schedule:-

- a. “asbestos” means any fibrous silicate mineral and any admixture containing actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite or any mixture thereof, whether crude, crushed or opened;
- b. “asbestos textiles” means yarn or clothes composed of asbestos or asbestos mixed with any other materials;
- c. “approved” means approved for the time being in writing by the Chief Inspector-cum-Facilitator;
- d. “breathing apparatus” means a helmet or face piece with necessary connection by means of which a person using it breathes air free from dust, or any other approved apparatus;
- e. “efficient exhaust draught” means a localised ventilation by mechanical means for the removal of dust so as to prevent dust from escaping into air of any place in which

work is carried on. No draught shall be deemed to be efficient which fails to control dust produced at the point where such dust originates;

- f. "preparing means crushing, disintegrating any other processes in or incidental to the opening or asbestos;
- g. "protective clothing" means overalls and head covering, which (in either case) will when worn exclude asbestosdust;
- h. "asbestos dust" means, airborne particles of asbestos or settled particles of asbestos which are liable to become airborne in the factory
- i. "airborne asbestos dust" means, for the purposes of measurement, dust particles measured by gravimetric assessment or other equivalent method;
- j. "repairable asbestos fibers" means asbestos fibers having diameter of less than 3 micrometer and a length to diameter ratio greater than 3:1'
- k. "exposure to asbestos" means exposure to airborne repairable asbestos fibers or asbestos dust; whether originating from asbestos or from minerals, materials or products containing asbestos in the factory.

**3. Demolition of plants or structures.**-No person shall carry out any demolition of plants or structures containing friable asbestos insulation material and removal of asbestos from building or structures in which asbestos is liable to become air-borne, unless he is recognized and duly empowered by the Chief Inspector-cum-Facilitator as qualified to carry out such work in accordance with the provisions of this Schedule.

**4. Tools and equipment:**-Any tools or equipment used in processes to which this schedule applies shall be such that they do not create asbestos dust above the permissible limit or are equipped with efficient exhaust draught.

**5. Exhaust draught.-**

- (1) An effective exhaust draught shall be provided and maintained to control dust from the following processes and machines as per the relevant standard prescribed by the Bureau of Indian Standard or in absence of it, relevant international standards:-
  - a) manufacture and conveying machinery, such as
    - (i) preparing, grinding, or dry mixing machines;
    - (ii) carding, card waste and ring spinning machines, and looms;
    - (iii) machines or other plant fed with asbestos;
    - (iv) machines used for the sawing, grinding, turning, drilling, abrading or polishing, in the dry state of articles composed wholly or partly of asbestos;
  - b) cleaning and grinding of the cylinders or other parts of a carding machine;
  - c) chambers, hoppers or other structures into which looses asbestos is delivered or passes;
  - d) work-benches for asbestos waste sorting or for other manipulation or asbestos by hand;
  - e) workplaces at which the filling or emptying of sacks, skips or other portable containers, weighing or other process incidental thereto which is effected by hand, is carried on;
  - f) sack cleaning machines;
  - g) mixing and blending of asbestos by hand; and
  - h) any other process in which dust is given off into the work environment.
- (2) Exhaust ventilation equipment provided in accordance with sub-paragraph (1) shall, while any work of maintenance or repair to the machinery, apparatus or other plant or equipment in connection with which it is provided is being carried on, be kept in use so as to produce an exhaust draught which prevents the entry of asbestos dust into the air of any workplace.
- (3) Arrangements shall be made to prevent asbestos dust discharged from exhaust

- apparatus being drawn into the air of any workroom.
- (4) The asbestos bearing dust removed from any workroom by the exhaust system shall be collected in suitable receptacles or filter bags which shall be isolated from all work areas.

#### **6. Testing and examination of ventilating systems:-**

- (1) All ventilating systems used for the purpose of extracting or suppressing dust as required by this schedule shall be as per the relevant standard prescribed by the Bureau of Indian Standards, examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of twelve months. Any defects found by such examinations or test shall be rectified forthwith.
- (2) A register containing particulars of such examination and tests as shown in **Form XXXV** and the state of the plant and the repairs or alterations, if any, found to be necessary shall be kept and shall be available for inspection by an inspector-cum-Facilitator.

#### **7. Segregation in case of certain process:-**

Mixing or blending of asbestos by the hand, or making or repairing of mattresses composed wholly or partly of asbestos shall not be carried on in any in which any room other work is done.

#### **8. Storage and distribution of loose asbestos:-**

All loose asbestos shall, while not in use be kept in suitable closed receptacles which prevent the escape of asbestos dust there from. Such asbestos shall not be distributed within a factory except in closed receptacles or in a totally enclosed system of conveyance.

#### **9. Asbestos sacks:-**

- (1) All sacks used as receptacles for the purpose of transport of asbestos within the factory shall be constructed of impermeable materials and shall be kept in good repair.
- (2) A sack which has contained asbestos shall not be cleaned by hand beating but by a machine, complying with paragraph 5.
- (3) Asbestos sacks or receptacles which contain asbestos shall be disposed off in a safe manner.

#### **10. Maintenance of floors and workplaces.-**

- (1) In every room in which any of the requirements of this schedule apply -
- (a) the floors, work-benches, machinery and plant shall be kept in a clean state and free from asbestos debris and suitable arrangements shall be made for the storage of asbestos not immediately required for use; and
- (b) the floors shall be kept free from any materials, plant or other articles not immediately required for the work carried on in the room, which would obstruct the proper cleaning of the floor.
- (2) The cleaning as mentioned in sub-paragraph (1) shall so far as is practicable, as carried out by means of vacuum cleaning equipment so designed and constructed and so used that asbestos dust neither escapes nor is discharged into the air of any work place.
- (3) When the cleaning is done by any method other than that mentioned in sub-paragraph (2), the persons doing cleaning work and any other person employed in that room shall be provided with respiratory protective equipment and protective clothing.
- (4) The vacuum cleaning equipment used in accordance with provisions of sub-paragraph (2), shall be properly maintained and after each cleaning operation, its surfaces kept in a clean state and free from asbestos waste and dust.
- (5) Asbestos waste shall not be permitted to remain on the floors or other surfaces at the work place at the end of the working shift and shall be transferred without



delay to suitable receptacles. Any spillage of asbestos waste occurring during the course of the work at any time shall be removed and transferred to the receptacles maintained for the purpose without delay.

- (6) (1) The occupier shall replace asbestos or of certain types of asbestos or products containing asbestos by other materials or products or shall use alternative technology, scientifically evaluated as harmless or less harmful, wherever is possible.

(2) The occupier shall take all the measures to prevent or control the release of asbestos in to the air and to ensure that the exposure limits or other exposure criteria are complied with and also reduce exposure to as low as a level as is reasonably practicable

#### **11. Breathing Apparatus, Personnel Protective Equipment and Clothing.-**

- (1) The occupier of every factory to which this schedule applies shall provide to workers personnel protective equipments such as hand gloves, shoes, helmets, goggles, earplug, aprons, safety belt, overall suit, etc, as per the relevant standard prescribed by the Bureau of Indian Standards or in absence of it, relevant international standards. The approved breathing apparatus and appropriate work clothing as per the relevant standard prescribed by the Bureau of Indian Standards in consultation with the workers representatives and maintained in good conditions for use of every person employed -
- (a) in chambers containing loose asbestos;
  - (b) in cleaning, dust settling or filtering chambers of apparatus;
  - (c) in cleaning the cylinders, including the defer cylinders, or other parts of a carding machine by means of hand-stickles;
  - (d) in filling, beating or levelling in the manufacture or repair of insulating mattresses; and
  - (e) in any other operation or circumstances in which it is impracticable to adopt technical means to control asbestos dust in the work environment within the permissible limit.
- (2) Suitable accommodation in conveniently accessible position shall be provided for the use of persons when putting on or taking off breathing apparatus and protective clothing provided in accordance with this schedule and for the storage of such apparatus and clothing when not in use.
- (3) All breathing apparatus and protective clothing not in use shall be stored in the accommodation provided in accordance with sub-paragraph (2) above.
- (4) All protective clothing in use shall be de-dusted under an efficient exhaust draught or by vacuum cleaning and shall be washed at suitable intervals. The cleaning schedule and procedure should be such as to ensure the efficiency in protective the wearer.
- (5) All breathing apparatus shall be cleaned and disinfected at suitable intervals and thoroughly inspected once in every month by a responsible person.
- (6) (6). A record of the cleaning and maintenance and of the condition of the breathing apparatus shall be maintained in a register provided for that purpose which shall be readily available for inspection by an Inspector-cum-Facilitator.
- (7) No person shall be employed to perform any work specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under that sub-paragraph unless he has been fully instructed in the proper use of that equipment.
- (8) No breathing apparatus provided in pursuance of sub-paragraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed: in the proper use of that equipment.
- (9) No worker shall take home any work clothing or special protective clothing or personal protective equipment provided him for protection against exposure to asbestos.

#### **12. Separate accommodation for personal clothing:-**

A separate accommodation shall be provided in a conveniently accessible position for

all persons employed in operations to which this schedule applies for storing of personal clothing.

This shall be separated from the accommodation provided under sub-paragraph (2) of paragraph 11 to prevent contamination of personal clothing.

**13. Washing and bathing facilities.-**

- (1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the processes covered by this schedule, adequate washing and bathing places having a constant supply of water undercover at the rate of one such place for every 15 persons employed.
- (2) The washing places shall have standpipes placed at intervals of not less than one metre.
- (3) Not less than one half of the total number of washing places shall be provided with bathrooms.
- (4) Sufficient supply of clean towels made of suitable material shall be provided:

Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector-cum-Facilitator.

- (5) Sufficient supply of soap and nail brushes shall be provided.

**14. Mess Room:-**

There shall be provided and maintained for the use of all workers employed in the factory covered by this schedule, remaining on the premises during the rest intervals, a suitable mess room which shall be furnished with

- (a) sufficient tables and benches with back rest; and
- (b) adequate means for warming food.

**15. Prohibition relating to smoking:-**

No person shall smoke in any area where processes covered by this schedule are carried on. A notice in Kannada and the language understood by majority of the workers shall be posted in the plant prohibiting smoking at such areas.

**16. Pictorial Cautionary notices:-**

Cautionary notices in the form specified in appendix and printed in Kannada and the language easily read and understood by the majority of the workers shall be displayed in prominent places in the workrooms where asbestos or substances containing asbestos are manufactured, handled or used.

**17. Air monitoring.-**

To ensure the effectiveness of control measures in continuous or repetitive processes, the monitoring of asbestos fibres in air as well as personal monitoring of workers shall be carried out at least once in every shift and the result so obtained shall be entered in register and

- (a) there shall be no substantial change in workplace conditions;
- (b) the results of the two (2) preceding measurements have not exceeded half the relevant control limit.
- (c) all factories should adopt membrane filter test as per the relevant standard prescribed by the Bureau of Indian Standards without fail.

**Explanation.-** "Membrane Filter Test" is defined as the method of determination of airborne asbestos fiber concentration in work environment by light microscopy (Membrane Filter Method).

**18. Medical control measures:-**

- (1) The occupier of every factory in which a worker employed in the processes specified in Sub paragraph (1) of paragraph 1, shall ensure that every worker employed be

- examined by a Medical officer within fifteen days of his first employment. Such medical examination shall include sputum examination for asbestos bodies, pulmonary function test and chest X ray-Posterior Anterior (PA) view to be compared with standard International Labour Organisation Radiographs on Pneumoconiosis. No worker shall be allowed to work after fifteen days of his first employment in the factory unless certified fit for such employment by the Medical officer.
- (2) Every worker employed in the said processes shall be re-examined by a Medical officer atleast once in every twelve months. Such re-examination shall, wherever the Medical officer considers appropriate, include all the tests as specified in sub-paragraph (1) except chest X-ray which shall be read by a radiologist specialized/ trained in the field of reading International Labour Organisation Radiographs on Pneumoconiosis and the chest X-ray which shall be carried out atleast once in three years.
  - (3) Every worker employed in any of the aforesaid processes on the date on which this schedule comes into force shall be radiological examined by the qualified Radiologist at the cost of the occupier using a standard size X-ray plates and the power of the X-ray machine shall be more than 300 mili ampere (mA). The report of such X-ray shall be submitted to the Medical officer for within three months of the said date.
  - (4) The Medical officer after examining a worker, shall issue a Certificate of Fitness in **Form XXXIV**. The record of re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Occupier of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests shall also be entered by the Medical officer in a Health Register in **Form XXXIII**. The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator and produce on demand.
  - (5) If at any time the Medical officer is of the opinion that a worker is no longer fit for employment in the said process on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said Certificate and the health register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he fully is incapacitated in the opinion of the Medical officer, in which case the person affected shall be suitably rehabilitated.
  - (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Medical officer, after further examination, again certifies him fit for employment in those processes.
  - (7) If a worker already in employment and declared unfit by the Medical officer shall not be allowed to work on any of the processes specified in sub-paragraph(1) of paragraph 1, unless he has been examined again along with standard size chest X-ray plate from a qualified Radiologist, at the cost of the occupier and has been certified to be fit to work on the said processes again.
  - (8) For the purpose of medical supervision by the Medical Practitioner so appointed by the occupier shall be provided for his exclusive use a room in, the factory premises which shall be properly cleaned, adequately lighted ventilated and furnished with a screen, a table with office stationary, chairs and other facilities and other instruments including X-ray arrangements for such examinations and such other equipments as may be prescribed by the Chief Inspector-cum-Facilitator for time to time. The Medical Practitioner so appointed shall perform the following duties:-
    - (a) maintain health register in **Form XXXIII**.
    - (b) undertake medical supervision of persons employed in the factory.
    - (c) look after health, education and rehabilitation of sick, injured or affected workers.
    - (d) carry out inspection of work rooms where dangerous operations are carried out and advise the management of the measures to be adopted for the protection of health of the workers employed therein.
  - (9) The Health Records of the workers exposed to asbestos, shall be maintained by the

- occupier and kept up to a minimum period of 40 years from the beginning of the employment or 15 years after retirement or cessation of the employment, whichever is later and shall be accessible to workers concerned or their representatives.
- (10) The record of medical examinations and appropriate tests carried out by the said Medical Practitioner shall be maintained in separate register approved by the Chief Inspector-cum-Facilitator which shall be kept readily available for inspection by the Inspector-cum-Facilitator and produce on demand.

## **APPENDIX**

### **Pictorial Cautionary Notice**

1. Asbestos/asbestos dust which is used, handled or manipulated in this factory is a very hazardous to health.
2. Prolonged exposure to asbestos dust may lead to serious diseases like lung fibrosis(Asbestosis) and lung cancer.
3. Entry is prohibited without protective equipment.
4. Wear the Protective Equipments to safeguard your health.
5. No food stuffs or drinks shall be brought into this area.
6. Smoking, eating food or drinking and chewing tobacco in this area is prohibited.
7. Scrupulous cleanliness shall be maintained in this area.
8. Dry sweeping in this area is prohibited. Any spillage of asbestos shall be cleaned by vacuum cleaning only.
9. A sack or container contaminated with asbestos shall not be cleaned by hand and is to be disposed off by an appropriate method.
10. All protective equipments and clothing shall be re-dusted by vacuum cleaning and stored in an appropriate place provided for the purpose.
11. Entry of unauthorized persons or authorized persons without proper protective equipments is prohibited.
12. Report for the prescribed medical examinations and tests regularly, to protect your own health.
13. Report to your doctor immediately if you suffer from persistent breathlessness, chest tightness or cough.

## **SCHEDULE-AH**

**(See rule 96 (2) & (4))**

### **HANDLING AND MANIPULATION OF CORROSIVE SUBSTANCES**

**1.** Without prejudice to the provisions contained in schedule XVI, this Schedule shall apply in respect of all factories or any part thereof in which handling and manipulation of Corrosive substances is carried on.

#### **2. Definitions**

For the purpose of this Schedule

- (a) "Corrosive operation" means any manufacturing process, storing, handling, processing, packing or using any corrosive substance in a factory.
- (b) "Corrosive substance" includes sulphuric acid, nitric acid, hydrochloric acid, hydrofluoric acid, carbolic acid, phosphoric acid, liquid chlorine, liquid bromine, ammonia, sodium hydroxide and potassium hydroxide and a mixture thereof, and any other substance which the State Government by notification in the Official Gazette specify to be corrosive substance.

#### **3. Flooring**

The floor of every workroom of a factory in which corrosive operation is carried on shall be made of impervious, corrosion and fire resistance material and shall be so constructed as to prevent collection of any corrosive substance. The surface of such

flooring shall be smooth and cleaned as often as necessary and maintained in a sound condition.

#### **4. Protective equipment**

- (a) The occupier shall provide for the use of all persons employed in any corrosive operation suitable protective wear for hands and feet, suitable aprons, face shields, chemical safety goggles and respirators. The equipments shall be maintained in good order and shall be kept in clean and hygienic condition by suitably treating to get rid of the ill-effects of any absorbed chemicals and by disinfecting. The occupier shall also provide suitable protective creams and other preparations wherever necessary.
- (b) The protective equipment and preparations provided shall be used by the persons employed in any corrosive operations.

#### **5. Water facilities**

Where any corrosive operation is carried on, there shall be provided as close to the place of such operation as possible, a source of clean water at a height of 210 cm. (7 feet) from a pipe 1.25 cm. (1/2 inch) diameter and fitted with a quick acting valve so that in case of injury to the worker by any corrosive substance the injured part can be thoroughly flooded with water. Whenever necessary, in order to ensure continuous water supply, a storage tank having minimum length, breadth and height of 210 cm, 120 cm., and 60 cm. respectively or such dimensions as are approved by the Chief Inspector-cum-Facilitator shall be provided as the source of clean water.

#### **6. Cautionary notice**

A cautionary notice in the following form and printed in the language which is understood by majority of the workers employed, shall be displayed prominently and close to the place where any corrosive operation is carried out and where it can be easily and conveniently read by the worker. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

#### **CAUTIONARY NOTICE**

Corrosive substances cause severe burns and the vapors thereof, may be extremely hazardous. In case of contact, immediately flood the part affected with plenty of water for atleast 15 minutes.

Get medical-attention quickly.

#### **7. Transport**

- (a) Corrosive substances shall not be filled, moved or carried except in containers or through pipes and when they are to be transported in containers, they shall be included in crates of sound construction and of sufficient strength.
- (b) a container with a capacity of 11.5 liters (2- 1/2 gallons) or more of a corrosive substance shall be placed in receptacle or crate and then carried by more than one person at a height below the waist line unless a suitable rubber wheeled truck is used for the purpose.
- (c) Containers for corrosive substance shall be plainly labeled.

#### **8. Devices for handling corrosives**

- (a) Tilting, lifting or pumping arrangements shall be used for emptying jars, carboys and other containers of corrosives.
- (b) Corrosive substances shall not be handled by bare hands but shall be handled by means of a suitable scoop or other device.

#### **9. Opening of valves**

Valves fitted to containers holding a corrosive substance shall be -opened with great care. If they do not work freely, they shall not be forced open. They shall be opened by

a worker suitably trained for that purpose.

#### **10. Cleaning tanks, stills, etc**

- (a) In cleaning out or removing residues from stills or other large chambers used for holding any corrosive substance, suitable implements made of wood or other material shall be used to prevent production of arseniuretted hydrogen (Arsine).
- (b) Whenever it is necessary for the purpose of cleaning or other maintenance work for any worker to enter chamber, tank, vat, pit or other confined space where a corrosive substance had been stored, all possible precautions shall be taken to ensure the worker's safety.
- (c) Wherever possible, before repairs are undertaken to any part of equipment in which a corrosive substance was handled, such equipment or part thereof shall be freed of any adhering corrosive substance by adopting suitable methods.

#### **11. Storage**

- (a) Corrosive substances shall not be stored in the same room with other chemicals, such as turpentine, carbides, metallic powders and combustible materials, the accidental mixing with which may cause a reaction which is either violent or gives rise to toxic fumes and gas.
- (b) Pumping or filling overhead tanks, receptacles, vats or other containers for storing corrosive substances shall be so arranged that there is no possibility of any corrosive substance overflowing and causing injury to any person.
- (c) Every container having a capacity of twenty liters or more on every pipe line, valves, and fitting used for storing or carrying corrosive substances shall be thoroughly examined every year for finding out any defects and defects shall be removed forthwith. A register shall be maintained of every such examination made and shall be produced before the Inspector-cum-Facilitator-cum-Facilitator whenever required.

#### **12. Fire extinguishers and fire-fighting equipment**

An adequate number of suitable type of fire extinguishers or other firefighting equipment, depending on the nature of chemicals stored shall be provided. Such extinguishers or other equipment shall be regularly tested and refilled. Clear instructions as to how the extinguishers or other equipment should be used printed in the language which majority of the workers employed understand, shall be affixed near each extinguisher or other equipment.

#### **13. Medical Examination by Medical officer**

- 1) Every work exposed to corrosive substances shall be examined by a Medical officer at least once at least once in every twelve months and such examinations shall, wherever the Medical officer considers appropriate, include skin evaluation, ophthalmic and pulmonary function test.
- 2) The Medical officer after examining a worker shall issue a certificate of fitness in Form XXX. The record of examination carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination, including the nature and the results of these tests, shall also be entered by the Medical officer in a Health Register in Form XXXIII.
- 3) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.

## **SCHEDULE-AI**

**(See rule 96 (2) & (4))**

### **MANUFACTURE OR MANIPULATION OF CARCINOGENIC DYE INTERMEDIATES**

#### **1. Application**

This Schedule shall apply in respect of all factories or any part thereof in which process of manufacturing or manipulation of a Carcinogenic Dye Intermediates (hereinafter referred to as the said manufacturing process) is carried on:

Provided that paragraphs 24 and 25 shall only apply to a process involving manufacture or manipulation of compounds mentioned in Appendix B (hereinafter referred to as the said manufacturing process B).

#### **PART I**

#### **2. Definitions**

For the purposes of this Schedule

- (a) "Air Line Respirator" means a helmet or face piece with necessary connections by means of which a person using it in a poisonous, or irritant atmosphere breathes ordinary air or any other suitable apparatus approved in writing by the Chief Inspector-cum-Facilitator ;
- (b) "Approved" means approved by the Chief Inspector-cum-Facilitator;
- (c) "Efficient Exhaust Draught" means localized ventilation effected by mechanical means for the removal of gas, vapour, dust or fume so as to prevent them from escaping into the air or any place in which work is carried on. No draught shall be deemed to be efficient which fails to remove smoke generated at the point where such gas, vapour, fumes or dust originates;
- (d) "First employment" means first employment in the said manufacturing process and also re- employment in such manufacturing process following any cessation of employment for continuous period exceeding three calendar months ;
- (e) "Manipulation" includes mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping, handling, using or chemical processing of a nitro or amino compound ;
- (f) "Nitro or amino compound" means a nitrated or aminated compounds of aromatic hydrocarbons mentioned in Appendix A or B attached thereto.

#### **3. Cautionary Placard**

Cautionary placard in the form specified in Appendix C attached to this Schedule and printed in the language of the majority of the workers employed shall be affixed in prominent places frequented by them in the factory where the placards can be easily and conveniently read by the workers; and arrangement shall be made by the occupier to instruct periodically all workers employed in the said manufacturing process regarding the precautions contained in the cautionary placard.

#### **4. Air space**

In every room in which the said manufacturing process is carried on there shall be atleast 15 centimeters of air space excluding any space occupied by machinery, equipments or any other article for each person employed therein and in computing this air space no height over 4.25 meters shall be taken into account.

#### **5. Efficient exhaust draught**

Unless the said manufacturing process is completely enclosed so as not to give rise to

dust or fume it shall not be carried on without the use of an efficient exhaust draught when a nitro or amino compound

- (a) is introduced into a tank, hopper, machine or container or filled into cartridge ;  
or
- (b) is ground, crushed, mixed, sieved or blended.

#### **6. Floor of workrooms**

The floor of every workroom in which the said manufacturing process is carried on shall be (a) smooth and impervious to water provided that asphalt or tar shall not be used in the composition of the floor, (b) maintained in sound condition, (c) slope and provided gutters and (d) thoroughly washed daily by means of hose pipe and drain water shall be led into a sewer through a closed channel.

#### **7. Work-benches**

Work-benches on which a nitro or amino compound is manipulated shall (a) have a smooth impervious surface preferably of stainless steel ; and (b) shall be washed daily with a hose-pipe or cleaned by means of a suction cleaning apparatus at a time when no other work is being carried on there.

#### **8. Waste**

- (1) A suitable receptacle made of non-absorbable material with a tightly fitting cover shall be provided and used for depositing waste, like cloth, paper or other material soiled with a nitro or amino compound.
- (2) All such contaminated waste material shall be destroyed by burning atleast once a week.

#### **9. Empty containers**

Empty containers used for holding com-pounds included under Appendix A shall be thoroughly cleaned of their contents and treated with an inactivating agent before being discarded.

#### **10. Decontamination of pit, tank, etc**

- (a) Before a worker enters a tank, pit, kettle or any other confined space which contained a nitro or amino compound, it shall be thoroughly washed and decontaminated.
- (b) No part of the plant which has contained a nitro or amino compound shall be repaired or opened for repairs unless it has emptied of such compound, thoroughly cleaned and decontaminated.
- (c) Records of such treatment shall be maintained in a register approved by the Chief Inspector-cum-Facilitator and the register shall be made available for inspection when required by an Inspector-cum-Facilitator.

#### **11. Manual handling**

A nitro or amino compound shall not be required or allowed to be mixed, filled, emptied or handled except by means of a scoop with a handle which shall be thoroughly cleaned daily.

#### **12. Protective wear**

The occupier shall provide, maintain clean and in good repair protective clothing and other equipments as specified in the table below

**THE TABLE**

Process	Protective clothing and other equipment
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For manipulation of compounds mentioned in Appendices A and B	Long pants and shirts or overalls with long sleeves and head coverings. The shirt or overalls shall cover the neck completely  Rubber gloves, rubber gum boots, rubber aprons and air line respirator
For manipulation of compounds mentioned in Appendix B	White clean clothing mentioned in (a) Above, in addition to white clean shirts, singlet and protective equipment as in (b)  White long sleeved aprons above

### 13. Instructions as regards risks

Every worker on his first employment shall be fully instructed on the properties of the chemical he has to handle and of the dangers involved. Workers shall also be instructed in the measures to be taken to deal with any emergency.

### 14. Medical facilities and records of examinations and tests

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said Medical Practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

### 15. Medical Examination by the Medical Officer

- (1) Every worker employed in the said processes shall be examined by a Medical Officer within 15 days of his first employment. Such examination shall include tests for detection of methemoglobin in blood (Heamatological tests), paranitrophenol in urine, Pulmonary function tests and C.N.S. tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the said processes shall be re-examined by a Medical Officer atleast once in every six calendar months and such re-examinations shall, wherever the Medical Officer considers appropriate, include all the tests specified in sub-paragraph (1).
- (3) The Medical Officer after examining a worker, shall issue a certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.

- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said process unless the Medical Officer, after further examination, again certifies him fit for employment in those processes.

#### **16. Washing and bathing facilities**

- (1) The following washing and bathing facilities shall be provided and maintained in cleanly state and in good repair for the use of all persons employed in the said manufacturing process:
- a. A wash place under cover with clean towels, soap and nail brushes and with atleast one stand- pipe for every five such persons having constant supply of water.
  - b. Fifty percent of the stand-pipes provided under item (a) above shall be located in bathroom where both hot and cold water shall be made available, during the working hours of the factory and for one hour thereafter.
  - c. The washing and bathing facilities shall be within a radius of 15 meters from the area housing the said manufacturing process.
  - d. Clean towels shall be provided individually to each worker if so ordered by an Inspector-cum-Facilitator.
  - e. In addition to taps mentioned under item (a), one stand-pipe in which warm water made available shall be provided on each floor.
- (2) Arrangement shall be made to wash factory uniforms clothes compulsorily every day.

#### **17. Washing and bathing**

- (a) All workers employed in the said manufacturing process shall carefully wash their hands and face before partaking of food or leaving the factory.
- (b) Bath Register. — Workers employed in the said manufacturing process shall take a bath daily at the factory premises and enter their names in the bath register in token of having done so.

#### **18. Food, drinks, etc., prohibited in workroom**

No worker shall consume food, drink, pan, supari or tobacco or shall smoke in any workroom in which the said manufacturing process is carried on and no worker shall remain in any such room during intervals for meals or rest.

#### **19. Cloak-room**

There shall be provided and maintained in a clean state and in good repair for the use of the persons employed in the said manufacturing process (a) a cloak-room with lockers having two compare meats, one for street clothes and the other for factory clothes and (b) a place separate from the locker room and from the mess-room for the storage of protective equipment provided under paragraph 13. The accommodation so provided shall be under the care of a responsible person and shall be kept clean.

#### **20. Mess-room**

There shall be provided and maintained for use of all persons employed in the factory and remaining in the premises during the meal intervals, a mess-room which shall be furnished with (a) tables and benches, and (b) means for warming food.

The mess-room shall be placed under the charge of a responsible person and shall be kept clean.

#### **21. Time allowed for washing**

Before each meal and before the end of the day's work atleast ten minutes in addition to the regular intervals shall be allowed for washing to each person who has been employed in the said manufacturing process.

#### **22. Drying stoves**

- (1) Every drying stove shall be efficiently ventilated to the outside air in such a manner that hot air from the stove shall not be drawn into any workroom.
- (2) No person shall enter stove to remove the contents until a free current of air has been passed through it by mechanical means.

### **23. Non-sparking tools**

Non-sparking tools shall be provided for the purpose of cleaning or repairing machinery or operating any process where vapors of betanaphthylamine are evolved.

### **24. Testing of atmosphere, etc**

Aminos in the atmosphere of the workroom where the manufacturing process is carried on shall be estimated once every week and records of results of such estimations shall be made available when required by an Inspector-cum-Facilitator.

## **PART II**

### **25. Separation of processes**

The said manufacturing process B shall be carried on in rooms which shall not communicate with any other room except through a passage open entirely to outside atmosphere.

### **26. Limitation of exposure**

- (1) No worker under the age of 40 years shall be engaged in the factory for the said manufacturing process B for the first time after the date on which these rules come into force.
- (2) Before the end of the day's work atleast one hour shall be allowed for bathing to each person, who is employed in the said manufacturing process B including the lime allowed under paragraph 19.

### **APPENDIX A**

**(See paragraphs 2, 9, 12 and 14)**

The benzenes, toluenes, xylenes, having undergone nitration once or several times (nitro, dinitro and trinitro benzene and its homologues) and their chlorinated compounds, naphthalenes, having undergone nitration once or several times, aniline, and its homologues (toluidine, syncline, cumidine) anisdine, phenetidine and their chlorinated, nitrated and alkeylated compounds (demethylenillin toluylendiamine, toluidine, phynylhydrazine, toluylyhydrazin).

### **APPENDIX B**

**(See paragraphs 2, 12, 14, 24 and 25)**

Alphanaphthylamine.

Betanaphthylamine.

Henozidine and its salts

Dianisidinc.

Tolidine.

Dichlorobenzidine.

### **APPENDIX C**

**(SEE PARAGRAPH 3)**

### **CAUTIONARY PLACARD**

Advice to workers:

- (1) Nitro and amino compounds or aromatic hydrocarbons are dangerous. In this factory you have to handle them frequently.
- (2) All items of protective wear provided should be made use of to safeguard your

- health.
- (3) Maintain scrupulous cleanliness at all times. Before meal, wash hands and feet. A bath before leaving the factory is essential, taking care to wash the head well.
  - (4) If any chemical falls on your body, wash it off immediately with soap and water, change clothing at once, if soaked with a cyanotic nitro or amino compound. Contact the appointed doctor immediately.
  - (5) Do not handle any nitro or amino compound with bare hands. Use a long handled scoop.
  - (6) Avoid alcoholic drinks as these increase risk of poisoning.
  - (7) In case of illness contact the Occupier and the appointed doctor.
  - (8) Do not chew, eat, drink or smoke in the workroom or with soiled hands. Keep food and drink away from the workplace.
  - (9) If you work with Betanaphthylamine or benzidine or its salts, alphanaphthylamine or dianisidine
    - (a) remember the serious effects will follow after a number of years if great care is not taken to observe absolute cleanliness of body, clothes, machinery and tools;
    - (b) at mealtime, wash face and hands twice with soap and water to remove all chemicals ; wear a long-sleeved clean apron while eating;
    - (c) before leaving the factory take a bath using soap and water twice ; after this put on your home clothes.

#### **SCHEDULE-AJ**

**(See rule 96 (2) & (4))**

#### **PROCESS OF EXTRACTING OILS AND FATS IN SOLVENT EXTRACTION PLANTS**

##### **1. Definitions**

- (a) " Competent Person " for the purpose of this Schedule shall be atleast a member or an Associate Member of the Institution of Engineers (India) with ten years experience in a responsible position as may be approved by the Chief Inspector-cum-Facilitator :

Provided that a Graduate in Mechanical Engineering or Chemical Technology with specialized knowledge of Oils and Fats and with a minimum experience of live years in a solvent extraction plant shall also be considered to be a competent person:

Provided further that the State Government may accept any other qualifications, if in its opinion, they are equivalent to the qualifications aforesaid ;
- (b) "Flame-proof enclosure as applied to electrical machinery or apparatus means an enclosure that will withstand, when covers or other access doors are properly secured, an internal explosion of the inflammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating the internal inflammation (or explosion) to the external flammable gas or vapour.
- (c) "Solvent " means an inflammable liquid such as Pentane and Hexane and Heptane used for the extraction of vegetable oils;
- (d) "Solvent Extraction Plant ", means a plant in which the process of extracting oils and fats by the use of solvents is carried on.

##### **2. Location and lay out**

- (a) No solvent extraction plant shall be permitted to be constructed or extended within a distance of thirty meters from the nearest residential locality.
- (b) A continuous wire fencing shall be provided around the solvent extraction plant up to a minimum distance of 15 meters from the plant and the fencing so provided shall be not less than 1.5 meters in height.
- (c) No person shall be allowed to carry any matches or an open flame or fire inside the area bound by the fencing.
- (d) Boiler houses and other buildings where open flame processes are carried on shall be located atleast thirty meters away from the solvent extraction plant.

- (e) If godowns and preparatory processes are within a distance of thirty meters from the solvent extraction plant, these shall be atleast fifteen meters distance from the plant, and a continuous barrier wall of non-combustible material of a height of 1.5 meters from ground level shall be erected at a distance of not less than fifteen meters from the solvent extraction plant so that it extends to atleast thirty meters of vapour travel around its ends from the plant to the possible sources of ignition.

### **3. Electrical Installation**

- (a) All electrical motors, electrical wiring system, the electric lamps, switches, circuit breakers and all other electrical equipment used within the premises of a factory where extraction of oil is being carried on with the help of solvents shall be of flame proof construction and should be suitable for use in areas where Hexane or similar types of solvents or vapors are likely to exist.
- (b) All metal parts of the plant and building including various tanks and containers where solvents are stored or are likely to be present and all parts of electrical equipments not required to be energized shall be properly connected to earth so as to avoid accidental rise in the electrical potential of such parts above the earth potential.

### **4. Restriction on smoking**

Smoking shall be strictly prohibited within a distance of 15 meters from the solvent extraction plant. For this purpose 'No Smoking' signs shall be permanently displayed in the area.

### **5. Precautions against friction**

- (a) All tools and equipment including ladders, chains and other lifting tackle required to be used in the solvent extraction plant shall be of non-sparking type ;
- (b) No machinery or equipment in any solvent extraction plant shall be belt driven unless the belt used is of such a type that it does not permit accumulation of static electricity to a dangerous level;
- (c) No person shall be allowed to enter and work in the solvent extraction plant wearing clothes made of nylon or such other fiber that can generate static electrical charge or wear footwear which is likely to cause sparks by friction.

### **6. Fire-fighting apparatus**

- (a) An adequate number of portable fire extinguishers suitable for use against flammable liquid fire shall be provided in the solvent extraction plant;
- (b) An automatic water spray sprinkler system on a wet pipe or open head deluge system with a sufficient supply of storage water shall be provided over the solvent extraction plant and throughout the building housing such plant.

### **7. Precautions against power failure**

Provision shall be made for the automatic cutting off of steam in the event of power failure and also for emergency overhead water supply for feeding water by gravity to condensers which shall come into play automatically upon a power failure.

### **8. Magnetic separators**

Oil-cake shall be fed to the extractor by a conveyor through a hopper and a magnetic separator shall be provided to remove any piece of iron during its transfer.

### **9. Venting**

- (a) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.
- (b) All emergency relief vents shall terminate atleast six meters above the ground and be so located that the vapors will not re-enter the building in which the solvent extraction plant is located.

## **10. Waste-water**

Process waste water shall be passed through a flash evaporator to remove any solvent before it is discharged into a sump which should be located within the fenced area but should not be closer than eight meters to the fence.

## **11. Ventilation**

The solvent extraction plant shall be well ventilated and if the plant is housed in a building, the building shall be provided with mechanical ventilation with provision for atleast six air changes per hour.

## **12. House-keeping**

- (a) Solvent shall not be stored in an area covered by the solvent extraction plant except in small quantities which shall be stored in approved safety cans;
- (b) Waste materials such as oily rags, other wastes and absorbents used to wipe off solvent and paints and oils shall be deposited in approved containers and removed from the premises atleast once a day ;
- (c) Space with the solvent extraction plant and within 15 meters from the plant shall be kept free from any combustible materials and any spills of oils or solvent shall be cleaned up immediately.

## **13. Examination and repairs**

- (a) The solvent extraction plant shall be examined by the competent person to determine any weakness or corrosion and wear once in every 12 months. Report of such examination shall be supplied to the Inspector-cum-Facilitator with his observation as to whether or not the plant is in safe condition to work ,
- (b) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.
- (c) Facility shall be provided for purging the plant with inert gas or steam before opening for cleaning or repairs and before introducing solvent after repairs.

## **14. Operating personnel**

The operation of the plant and machinery in the solvent extraction plant shall be in the charge of such duly qualified and trained persons as are certified by the competent person to be fit for the purpose and no other person shall be allowed to operate the plant and machinery.

## **15. Vapour detection**

A suitable type of flame- proof and portable combustible gas indicator shall be provided and maintained in good working order and a schedule of routine sampling of atmosphere at various locations as approved by the Chief Inspector-cum-Facilitator shall be drawn out and entered in a register maintained for the purpose.

## SCHEDULE-AK

(See rule 96 (2) & (4))

### FIRE WORKS MANUFACTORIES AND MATCH FACTORIES

#### 1. Application

The provisions of this Schedule shall apply to all manufactories and processes incidental thereto carried on in any Fire Works Manufactory or a match works and shall be in addition to and not in derogation of any provisions contained in other rules.

#### 2. Definition

- (a) "Fire Works Manufactory" means any factory or such parts of any factory wherein the following chemicals or combination of chemicals and materials are being used for the manufacture or crackers, sparklers, caps, fuses, blasting powder and fireworks

Saltpetre;	Pyrotechnic aluminium Powder;
Barium Nitrate;	Charcoal;
Potassium chloride;	Red Phosphorus;
Gum;	Dextrine;
Strontium Nitrate;	Magnesium Powder;
Copper Coated Wires;	Steel filings or iron filings;
G.I. Wire;	Gun Powder (Black Powder);

- (b) "Match works" means any establishment which manufactures safety matches or colour matches by the use of chemicals mentioned in clause (a).
- (c) "Breathing apparatus" means a device covering mouth or nose with necessary connections by means of which a person using it in a poisonous asphyxiating or irritant atmosphere breathes ordinary air or any other suitable apparatus approved in writing by the Chief Inspector-cum-Facilitator in this behalf.

#### 3. Buildings

- (a) The building of any fireworks manufactory or match factory shall conform to the standards prescribed under the Indian Explosives Act 1884 (Central Act IV of 1884), and the height of such buildings shall at no time be less than 3 meters;
- (b) No building inside a fireworks manufactory shall have a first floor at any time;
- (c) In Match works, provided with a first floor, there shall be 2 staircases leading from the first floor to the ground floor irrespective of the number of persons employed in the first floor and one of the staircases shall be of masonry construction or of non-inflammable materials;
- (d) All doors shall open outwards and all the doorways shall be kept free from obstructions;
- (e) All doors of workrooms shall not be less than 1.2 meters in width or less than 2 meters in height;
- (f) The floors of all work rooms including mixing sheds shall be completely covered by a rubber sheet having a smooth surface and having a thickness of atleast 3 mm. If the floor cannot be covered by a single rubber sheet, more than one rubber sheet may be used, so that each sheet is overlapped by the other atleast 150 mm; and
- (g) Mixing sheds in a fireworks manufactory shall be at a distance of 18 meters away from all other sheds if the quantity of chemical stored, handled or used in the mixing shed is less than 50 kilograms and be separated by baffle walls opposite to each exit of the mixing shed:

Provided that the distance shall be atleast 21 meters, if the quantity of chemical stored, handled or used in the mixing shed exceeds 50 kilograms.

#### **4. House-keeping**

- (a) Every part of ways, works, machinery and plant shall be maintained in a clean and tidy condition;
- (b) Any spillage of materials shall be cleaned without delay;
- (c) Close platforms, passages and gangways shall be kept free of temporary obstructions.

#### **5. Electrical Equipment**

- (a) If at any time, use of electricity is allowed in the factory, all leads, etc., shall be in conduits with flame-proof junctions;
- (b) Electrical supply shall never be through a lamp even with a non-conducting handle.

#### **6. Protective clothing**

- (a) Under no circumstances clothes made of artificial fiber like terelene, etc., be allowed inside the factory ;
- (b) All workers shall be supplied with asbestos aprons especially to cover the chest, gonads and thighs
- (c) Breathing apparatus shall be used in mixing sheds to avoid workers inhaling poisonous fumes in the event of an untoward reaction.
- (d) In mixing sheds where aluminium and magnesium powders are used "anti-stat" foot-wear to combat static electricity shall be supplied.
- (e) All protective equipments shall be maintained in an efficient condition and also shall be maintained in a clean and hygienic condition.

#### **7. Match Factories**

In match factories --

- (i) the residue of the head composition shall not in any way be mixed with the residue of the friction composition ;
- (ii) the rooms comprising the two mixing departments, namely, (a) head composition and (b) friction composition shall be entirely separated from each other and the drains from these two departments shall be kept entirely separate ;
- (iii) rubbish containing the residues of the head composition and friction composition shall be kept and burnt separately ;
- (iv) department in which completed matches (matches with heads on) are stored shall be separated from all other departments by means of fire-proof walls and doors providing adequate means of escape in case of fire :

Provided that the Chief Inspector-cum-Facilitator may, subject to such conditions, as he may deem necessary, exempt any factory in existence on the first January 1935 , from the provisions of this clause ;

- (v) Splints, veneers and other materials in excess of the quantity required for the day's manufacture shall be kept in separate rooms of the factory where no manufacturing process is carried on. No manufactured material shall be stored anywhere in the factory compound for more than five days after the manufacture except in the storage godowns;

Provided that nothing contained in this clause shall apply to splints and veneers in cases stored in peeling and box making departments;

- (vi) Store room for matches shall be entirely separated by fire-proof walls from the buildings used for manufacture
- (vii) The racks in the dipped splints room shall have sides top and the rear part provided with non-inflammable materials.
- (viii) The process of packing shall be done in an area away from the place of manufacture to the satisfaction of the Inspector-cum-Facilitator ; and



- (ix) No child shall be employed or permitted to work in any process directly connected with the manufacturing process up to final production of match sticks.

#### **8. Precautions to be taken in connection with manufacture of fuses used in crackers, etc**

- (a) Bundles of fuses shall be handled by carrying and not dragging them on the floor;
- (b) Drying of fuses after wrapping shall be carried out on platforms away from workrooms;
- (c) Cutting shall be done by experienced workers employed only for this purpose and under proper supervision;
- (d) Cutting shall be done on a large masonry platform covered with a tarpaulin and kept free from grit and pebbles;
- (e) Cutting shall be done on a raised platform so that workers can work standing. Cutting must be done by placing the fuse on wooden sleepers kept over blocks of wood. Brick shall not be used beneath the wooden sleepers; and
- (f) Workers, while on dangerous operations, shall not wear clothing sewn with ferrous or steel buttons, buckles or attachments. They shall not carry on their persons, iron knives, keys, etc.

#### **9. General**

- (a) No person other than a factory worker and/or an inspecting officer or others connected with the manufacturing process shall be allowed to enter the working area;
- (b) Cardboard containers and trays without steel nails shall be used for storage and day-to-day working purposes.
- (c) During the manufacture of fuses only brass or non-ferrous knives shall be used and drying of fuses shall be away from all workrooms.
- (d) Door mats shall be provided outside the workroom and near all drying platforms and where fuses are cut for the workers to clean their feet.
- (e) At no time, mixing materials shall exceed the quantity that is required for the manufacture of mixing for half an hour operation only.
- (f) For filling up chemicals in the inner tubes of crackers, only aluminium or plastic rings shall be used and not galvanized iron rings.
- (g) Buckets, containers, hoops, locks, nails, screws, bolts, nuts, knives, scissors, hinges, latches etc., made up of iron shall not be used within the factory premises.
- (h) Wooden racks without iron nails shall be used for drying paper cap sheets, in amorce factories.
- (i) Wooden racks used for drying paper cap sheets shall be provided with asbestos or other fire resistant sheets on the three sides leaving the front side open.
- (j) Dried paper cap sheets shall be carried in wooden trays with four compartments (partitions) each compartment (partition) carrying a single sheet.
- (k) Each manufacturing shed of fireworks shall have at least two doors facing each other. The doors provided to the work sheds of adjacent rows shall not face each other.
- (l) Not more than four persons shall be employed or allowed at any one time in any one building in which explosive is being manufactured.
- (m) Copper plates shall be fixed on the baffle wall of the chemical mixing shed and chemical filling shed; and the workers before entering those sheds, shall place their hands on the copper plates in order to discharge the electrostatic charges from their body and to protect them from any untoward fire or explosion.
- (n) Workers aged above 55 years shall be employed only in non-explosive areas.
- (o) No person, aged 50 years and above shall be employed in Fireworks Manufactory unless his eyesight including colour vision and his hearing capacity are examined and declared fit by a qualified ophthalmologist and ENT specialist, respectively, to work whether with or without use of corrective appliances. Such examinations shall be made at least once in every two years. Record of examination or re-examination carried

- out shall be produced on demand to Inspector-cum-Facilitator at the time inspection.
- (p) Work benches and tables shall be provided for mixing and filling operations.
  - (q) Blast walls shall be provided around the drying platform at a distance of 2 meters away from the drying platform. The height of the blast wall shall be atleast one foot more than that of the height of the drying platform.
  - (r) In every Fireworks Factory, there shall be appointed a Supervisor with minimum qualification of B.Sc. (Chemistry) or Diploma in Chemical Engineering or its equivalent. He shall be fully conversant with the process of manufacture of fireworks and the associated hazards. These Supervisors shall undergo special training of fireworks safety as approved by the Chief Inspector-cum-Facilitator. Number of Supervisors shall be at the rate of 1 for every 50 workers. Manufacture of fireworks shall be carried out under the supervision of such Supervisors.
  - (s) Factories which make fancy crackers shall have,
    - (i) separate colour pellet machine shed ;
    - (ii) separate colour pellet drying shed ; and
    - (iii) separate transit rock for storing colour pellets.
  - (t) Not more than one manufacturing activity at any one item of crackers shall be allowed or required to be done in any working shed at a time.
  - (u) The workers involved in mixing and filling operations shall have an education qualification of atleast Higher Secondary Course.
  - (v) The drying platform meant for Rockets and Fire Works of flying nature shall be provided with a temporary roof of a strong aluminium mesh cover resting on the baffle walls, for protection from direct sunlight.
  - (w) There shall be provided atleast two burning pits in every factory and each burning pit shall be at a minimum distance of 62 meters away from the working sheds.
  - (x) The collected waste shall be disposed in the burning pit after the working hours of the factory on the same day in the presence of the Foreman by a trained worker.
  - (y) Wind direction indicator shall be provided in each factory.
  - (z) No electronic appliances such as mobile phones, transistors etc., shall be allowed in the premises, where fireworks are manufactured, handled, stored or used.
  - (aa) The mixed chemicals shall be used on the same day. No mixed chemical (fireworks) composition, dry or wet shall be kept in the factory at the close of any working day. Such residual composition shall be safely destroyed at the close of the day.
  - (bb) Fireworks factory ordinarily employing 250 workers or more shall appoint a qualified Safety Officer as per the Karnataka Safety Officer (Duties, Responsibilities and Conditions of Service, 2005 at the rate of one Safety Officer for 250 workers.
  - (cc) No manufacturing activity shall be carried on in Fireworks factory between 6.00 pm. And 6.00 am.

## **10. Display of notices**

The following notices in the local language understood by the majority of workers shall be displayed at a conspicuous place in the factory.

- (a) Smoking is strictly prohibited.
- (b) No one shall carry matches or other igniting materials into the factory.
- (c) No worker shall be in a workroom or area where no work has been assigned to him.
- (d) If anything untoward happens in any shed all workers shall dash to the gates which serve as outgates of the factory and in no circumstances be curious to see what has happened in the affected shed.
- (e) Any spillage of materials should be cleaned without any delay.
- (f) Wearing of clothes made of artificial fiber like terene, etc., is prohibited. Clothing's sewn with ferrous or steel buttons or buckles or attachments should not be worn.
- (g) Foot wears with iron nails should not be used-(It) Workers should not carry with themselves iron knives and iron keys, etc.

## **11. First-aid boxes**

- (a) In addition to the First-Aid Box, four stretchers shall be available for every twenty persons employed in the premises.
- (b) Adequate amount of burn dressings and 24 ounces of coconut oil to be used as the first remedy for burns shall be kept in the First-Aid Box.
- (c) Persons who are in charge of First-Aid Boxes shall be those who possess the certificate granted by the agencies authorized by the State Government for rendering first-aid training.

## **12. Medical Examination by Medical Officer:**

- (1) Every worker employed in the process of mixing, filling and handling of chemicals in the fire-works factories shall be medically examined by a Medical Officer within fifteen days of his first employment. Such medical examination shall include skin test for Dermatitis, Pulmonary Function Test and Chest X-ray. No worker shall be allowed to work after fifteen days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the said process shall be re-examined by a Medical Officer atleast once in every six months. Such re-examination shall, wherever the Medical Officer considers appropriate, include all the tests specified in sub-paragraph (1) except Chest X-ray which will be done once in three years.
- (3) The Medical Officer after examining a worker shall issue a Certificate of Fitness in **Form XXXIV**. The record of re-examination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Occupier of the factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**.
- (4) The Certificate of Fitness and the Health Register shall be kept readily available for inspection by the Inspector-cum-facilitator.
- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in those documents and should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above, shall be re-employed or permitted to work in the said processes unless the Medical Officer, after further examination, again certifies him fit for employment in those processes.

## **SCHEDULE-AL**

**(See rule 96 (2) & (4))**

### **MANUFACTURE OR MANIPULATION OF MANGANESE AND ITS COMPOUNDS**

#### **1. Definitions**

For the purpose of this Schedule

- (a) "Manganese Process" means processing, manufacture or manipulation of manganese or any compound of manganese or any ore or any mixture containing manganese.
- (b) "First employment" means first employment in any manganese process and includes also re-employment in any manganese process following any cessation of employment for a continuous period exceeding 3 calendar months ;
- (c) "Manipulation" means mixing, blending, filling, emptying, grinding, sieving, drying, packing, sweeping or otherwise handling of manganese or a compound of

manganese or any mixture containing manganese ;

- (d) "Efficient exhaust ventilation" means localized ventilation effected by mechanical means for the removal of dust or fume or mist at its source of origin so as to prevent it from escaping into the atmosphere of any place where any work is carried on. No draught shall be deemed to be efficient which fails to remove the dust or fume or mist at the point where it is generated and fails to prevent it from escaping into and spreading into the atmosphere of a work place.

## **2. Application**

The Schedule shall apply to every factory in which or in any part of which any manganese process is carried on.

## **3. Isolation of a process**

Every manganese process which may give rise to dust, vapour or mist containing manganese shall be carried on in a totally enclosed system or otherwise effectively isolated from other processes so that other plants and process and other parts of the factory and persons employed on other work or process may not be affected by the same.

## **4. Ventilation of process**

No process, in which any dust, vapour or mist containing manganese is generated, shall be carried out except under a efficient exhaust ventilation which shall be applied as near to the point of generation as practicable.

## **5. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health register **Form XXXIII** which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

## **6. Medical Examination by Medical officer**

- (1) Every worker employed in any manganese processes shall be examined by a Medical officer within 15 days of his first employment. Such examination shall include tests for detection of serum calcium, serum phosphate and manganese in blood and urine and also include steadiness tests and other neuromuscular co-ordination tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical officer.
- (2) Every worker employed in a manganese process shall be re-examined by a Medical officer atleast once in every three calendar months and such examinations shall, wherever the Medical officer considers appropriate, include all the tests in subparagraph (1).
- (3) The Medical officer after examining a worker shall issue a certificate of fitness in Form XXX. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination carried out under subparagraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Medical officer in a Health Register in **Form XXXIII**.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) if at any time the Medical officer is of the opinion that the worker is no longer fit for

employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical officer, in which case the person affected shall be suitably rehabilitated.

- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said process unless the Medical officer, after further examination, again certifies him fit for employment in those processes.

#### **7. Personal Protective Equipment**

- (1) The Occupier of the factory shall provide and maintain in good and clean condition suitable overalls and head coverings for all persons employed in any manganese process and such overalls and head coverings shall be worn by the persons while working on a manganese process.
- (2) The Occupier of the factory shall provide suitable respiratory protective equipment for use by workers in emergency to prevent inhalation of dusts, fumes or mists sufficient number of complete sets of such equipment shall always be kept near the workplace and the same shall be properly maintained and kept always in a condition to be used readily.
- (3) The Occupier shall provide and maintain for the use of all persons employed, suitable accommodation for the storage and make adequate arrangements for cleaning and maintenance of personal protective equipment.

#### **8. Food, drinks prohibited in the workrooms**

No food, drink, pan and supari or tobacco shall be allowed to be brought into or consumed by any worker in any work room in which any manganese process is carried on.

#### **9. Mess-room**

There shall be provided and maintained for the use of the persons employed in a manganese process a suitable mess-room which shall be furnished with sufficient tables and benches and adequate means for warming of food. The mess room shall be placed under the charge of a responsible person and shall be kept clean.

#### **10. Washing facilities**

There shall be provided and maintained in a clean state and in good condition, for the use of persons employed on manganese process a wash place under cover, with either

- (1) a trough with a smooth impervious surface fitted with a waste pipe without plug. The trough shall be of sufficient length to allow atleast 60 centimeters for every ten such persons employed at any one time, and having a constant supply of water from tap or jets above the trough at intervals of not more than 60 centimeters, or atleast one wash basin for every five such persons employed at any one time, fitted with a waste pipe and plug and having a constant supply of water; and
- (2) sufficient supply of soap or other suitable cleaning material and nail brushes and clean towels.

#### **11. Cloak-room**

If the Chief Inspector-cum-Facilitator so requires there shall be provided and maintained for the use of persons employed in manganese process a cloak-room for the clothing put off during working hours with adequate arrangement for drying the clothing.

## **12. Cautionary placard instructions**

Cautionary notices in the following form and printed in the language of the majority of the workers employed, shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangements shall be made by the occupier to instruct periodically all workers employed in a manganese process regarding the health hazards connected with their duties and the best preventive measures and methods to protect themselves. The notices shall always be maintained in a legible condition.

### **CAUTIONARY NOTICE**

Manganese and Manganese Compounds

- (1) Dust fumes and mists of Manganese and Compounds are toxic when inhaled or when ingested.
- (2) Do not consume food or drink near the work place.
- (3) Take a good wash before taking meals.
- (4) Keep the working area clean.
- (5) Use the protective clothing and equipments provided.
- (6) When required to work in situations where dusts, fumes, or mists are likely to be inhaled, use respiratory protective equipments provided for the purpose.
- (7) If you get severe headaches, prolonged sleeplessness or abnormal sensations on the body, loose gait, speech interference and loss of virility, report to the Occupier who would make arrangements for your examination and treatment.

### **SCHEDULE-AM**

**(See rule 96 (2) & (4))**

### **CARBON DISULPHIDE PLANTS**

#### **1. Application**

This Schedule shall apply to all electric furnaces in which carbon disulphide is generated and all other plants where carbon disulphide, after generation is condensed, refined and stored.

These rules are in addition to and not in derogation of any of the provisions of the Act and the rules made there under.

#### **2. Construction, installation and operation**

- (a) The buildings in which electric furnaces are installed and carbon disulphide after generation is condensed and refined shall be segregated from other parts of the factory and shall be of open type to ensure optimum ventilation and the plant layout shall be such that only a minimum number of workers are exposed to the risk of any fire or explosion at any one time.
- (b) Every electric furnace and every plant in which carbon disulphide is condensed, refined and stored with all their fittings and attachments shall be of good construction, sound material and of adequate strength to sustain the internal pressure to which the furnace or the plant may be subjected and shall be so designed that carbon disulphide liquid and gas are in closed system during their normal working.
- (c) The electric furnace supports shall be firmly grouted about 61 centimeters in concrete or by other effective means.
- (d) Every electric furnace shall be installed and operated according to manufacturers' instructions and these instructions shall be clearly imparted to the personnel in charge of construction and operation.
- (e) The instructions regarding observance of correct furnace temperature, sulphur

dose, admissible current/power consumption and periodical checking of charcoal level shall be strictly complied with.

### **3. Electrodes**

- (a) Where upper ring electrodes made of steel or used in the electric furnace, they shall be of seamless tube construction and shall have arrangement for being connected to cooling water system through a siphon built in the electrodes or through a positive pressure water-pump.
- (b) The arrangement for cooling referred to in clause (a) shall be connected with automatic alarm system which will actuate in the event of interruption of cooling water in the electrodes and give visible and audible alarm signals in the control room and simultaneously stop power supply for the furnace operation and to stop the further supply of water. The alarm system and the actuating device shall be checked every day.

### **4. Maintenance of charcoal level**

When any electric furnace is in operation, it shall be ensured that the electrodes are kept covered with charcoal bed.

### **5. Charcoal separator**

- (a) Cyclone type of charcoal separator shall be fitted on the off take pipe between the electric furnace and sulphur separator to prevent entry of pieces of char-coal into the condensers and piping.
- (b) Any other design for gas off take pipe which does not allow charcoal pieces into the condensers and piping may be adopted.

### **6. Rupture Discs and Safety Seal**

- (a) At least two rupture discs of adequate size which shall blow off at a pressure twice the maximum operating pressure shall be provided on each furnace and shall either be mounted directly on the top of the furnace or each through an independent pipe as close as possible to the furnace.
- (b) A safety water seal shall be provided at the best possible location to ensure the maximum and effective operation of the rupture discs mentioned in (a) above.

### **7. Pyrometer and Manometers**

- (a) Each electric furnace shall be fitted with adequate number of pyrometers to give an indication of the temperature as correctly as reasonably practicable at various points in the furnace. The dials for reading the temperature shall be located in the control room.
- (b) Manometers or any other suitable devices shall be provided for indicating pressure
  - i. in the off take pipe before and after the sulphur separator ; and
  - ii. in primary and secondary condensers.

### **8. Check Valves or Water Seals**

All piping carrying carbon disulphide shall be fitted with check valves or water seals at suitable positions so as to prevent gas from flowing back into any electric furnace in the event of its shut down.

### **9. Inspection and maintenance of Electric Furnaces**

- (a) Every electric furnace shall be inspected internally by a competent person
  - (i) before being placed in service after installation;
  - (ii) before being placed in service after reconstruction or repairs ; and
  - (iii) periodically every time the furnace is opened for cleaning or (or replaced electrodes.

In respect of item (iii) if it is felt by operators that during dashing it is not necessary to inspect internally so as to conserve the heat in the furnace, internal inspection can be done away with.

(b) When an electric furnace is shut down for cleaning,

- (i) if removal of any part of the lining is resorted to, the condition of the shell shall be closely inspected, and
- (ii) any plates forming shell found corroded to the extent that safety of the furnace is endangered shall be replaced:

#### **10. Maintenance of Records**

The following hourly records shall be maintained in a logbook

- (i) Manometer reading at the points specified in clause (b) of Paragraph 7.
- (ii) Gas temperature indicated by pyrometers and all other vital points near the sulphur separator and primary and secondary condensers.
- (iii) Water temperature and flow of water through the siphon in the electrodes.
- (iv) Primary and secondary voltages and current and energy consumed.

#### **11. Electrical apparatus, wiring and fittings**

All buildings in which carbon disulphide is refined or stored shall be provided with electrical apparatus, wiring and fittings which shall afford adequate protection from fire and explosion.

#### **12. Prohibition relating to smoking**

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in buildings in which carbon disulphide is refined or stored, and a notice in the language understood by a majority of the workers shall be posted in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

#### **13. Means of escape**

Adequate means of escape shall be provided and maintained to enable persons to move to a safe place as quickly as possible in case of an emergency. At least two independent staircases of adequate width shall be provided in every building housing the furnaces at reasonable intervals at opposite ends. These shall always be kept clear of obstructions and so designed as to afford easy passage.

#### **14. Warnings in case of fire**

There shall be adequate arrangements for giving warnings in case of fire or explosion which shall operate on electricity and, in case of failure of electricity, by some mechanical means.

#### **15. Firefighting equipment**

- (a) Adequate number of suitable fire extinguishers or other fire-fighting equipment shall be kept in constant readiness for dealing with risks involved and depending on the amount and nature of materials stored:
- (b) Clear instructions as to how the extinguishers or other equipment should be used shall be printed in the language which the majority of the workers employed understand. The instructions shall be affixed to each extinguisher or other equipment and the personnel trained in their use shall be supplied with the instructions.

#### **16. Bulk sulphur**

- (a) Open or semi-enclosed space for storage of bulk sulphur shall be sited with due regard to the dangers which may arise from sparks given off by nearby locomotive, etc., and precautions shall be taken to see that flames, smoke and matches and other sources of ignition do not come in contact with the clouds of dust arising



- during handling of bulk sulphur.
- (b) All enclosures for bulk sulphur shall be of non-combustible construction, adequately ventilated and so designed as to provide a minimum of ledges on which dust may lodge.
  - (c) The bulk sulphur in the enclosures shall be handled in such a manner as to minimize the formation of dust clouds and no flame, smoke and matches or other sources of ignition shall be employed during handling and non-sparking tools shall be used whenever sulphur is shovelled or otherwise removed by hand.
  - (d) No repairs involving flames, heat or use of hand or power tools shall be made in the enclosure where bulk sulphur is stored.

#### **17. Liquid sulphur**

Open flames, electric sparks and other sources of ignition, including smoke and matches, shall be excluded from the vicinity of molten sulphur.

#### **18. Training and supervision**

- (a) All electric furnaces and all plants in which carbon disulphide is condensed, refined or stored shall be under adequate supervision at all times while the furnaces and plant are in operation.
- (b) Workers in charge of operation and maintenance of electric furnaces and the plants shall be properly qualified and adequately trained.

#### **19. Washing facilities**

The occupier shall provide and maintain in a clean state and in good repair, for the use of all persons employed a wash-place under cover with at least one tap or stand-pipe, having a constant supply of clean water for every five such persons, the taps or stand-pipes being spaced not less than 120 centimeters apart with a sufficient supply of soap and clean towels, provided that towels shall be supplied individually to each worker if so ordered by the Inspector-cum-Facilitator. All the workers employed in sulphur storage handling and inching operations shall be provided with a nail brush.

#### **20. Personal Protective equipment**

- (a) Suitable goggles and protective clothing consisting of overalls without pockets, gloves and foot-wear shall be provided for the use of operatives:
  - (i) when operating valves or cocks controlling fluids, etc.
  - (ii) drawing off of molten sulphur from sulphur pots, and
  - (iii) handling charcoal or sulphur.
- (b) Suitable respiratory protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency.
- (c) Arrangements shall be made for the proper and efficient clearing of all such protective equipment.

#### **21. Cloak-rooms**

There shall be provided and maintained for the use of all persons employed in the processes a suitable cloak-room for clothing put off during work hours and a suitable place separate from the cloak-room for the storage of overalls or working clothes. The accommodation so provided shall be placed in the charge of a responsible person and shall be kept clean.

#### **22. Unauthorized persons**

Only maintenance and repair personnel, persons directly connected with the plant operation and those accompanied by authorised persons shall be admitted into the plant.

- 23.** (a) Every worker exposed to carbon disulphide shall be examined by a Medical officer

at least once in every twelve months and such examinations shall, wherever the Medical officer considers appropriate, include skin evaluation, urine analysis (TTCA detection), ophthalmic and ENT evaluation.

(b) The Medical officer after examining a worker shall issue a certificate of fitness in Form XXX. The record of examination carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination, including the nature and the results of these tests, shall also be entered by the Medical officer in a Health Register in Form XXXIII.

(c) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **SCHEDULE-AN**

**(See rule 96 (2) & (4))**

### **MANUFACTURE, HANDLING AND USE OF BENZENE**

#### **1. Application**

The provisions of this Schedule shall apply to all factories or parts thereof in which Benzene or substances containing Benzene are manufactured, handled or used.

#### **2. Definitions**

For the purpose of this Schedule,

- (a) 'Substances containing benzene' means substances wherein benzene content exceeds 1 percent by volume;
- (b) 'Substitute' means a chemical which is harmless or less harmful than benzene and can be used in place of benzene;
- (c) 'Enclosed system' means a system which will not allow escape of benzene vapors to the working atmosphere;
- (d) 'Efficient exhaust draught' means localized ventilation effected by mechanical means for the removal of gases, vapors, dusts or fumes so as to prevent them from escaping into the air of any workroom. No draught shall be deemed to be efficient if it fails to remove smoke generated at the point where such gases, vapors, fumes or dusts originate.

#### **3. Prohibition and substitution**

- (a) Use of benzene and substances containing benzene is prohibited in the following processes:
  - (i) Manufacture of varnishes, paints and thinners; and
  - (ii) cleaning and degreasing operations.
  - (iii) Benzene or substances containing Benzene shall not be used as a solvent or diluent unless the process in which it is used is carried on in an enclosed system or unless the process is carried on in a manner which is considered equally safe as if it were carried out in an enclosed system
- (b) Where suitable substitutes are available, they shall be used instead of Benzene or substances containing Benzene. This provision, however, shall not apply to the processes specified in Appendix A.
- (c) The Chief Inspector-cum-Facilitator may, subject to confirmation by the State Government, permit exemptions from the percentage laid down in clause 2 (a) and also from the provisions of sub-clause (b) temporarily under conditions and within limits of time to be determined after consultation with the employers and workers concerned.

#### **4. Protection against inhalation**

- (a) The process involving the use of Benzene or substances containing Benzene shall

- as far as practicable, be carried out in an enclosed system;
- (b) Where, however, it is not practicable to carry out the process in an enclosed system, to workroom in which Benzene or substances containing Benzene are used, shall be equipped with an efficient exhaust draught or other means for the removal of Benzene vapors to prevent their escape into the air of the workroom so that the concentration of Benzene in the air does not exceed 25 parts per million by volume or 80 mg/m<sup>3</sup>;
  - (c) Air analysis for the measurement of concentration of Benzene vapors in air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector-cum-Facilitator at places where process involving use of Benzene is carried on and the result of such analysis shall be recorded in a register specially maintained for this purpose. If the concentration of Benzene vapors in air as measured by air analysis, exceeds 25 parts per million by volume or 80 mg/m<sup>3</sup> the Occupier shall forthwith report the concentration to the Chief Inspector-cum-Facilitator stating the reasons for such increase;
  - (d) Workers who for special reasons are likely to be exposed to concentration of Benzene in the air of the workroom exceeding the maximum referred to in clause (b) shall be provided with suitable respirators or face masks. The duration of such exposure shall be limited as far as possible.

#### **5. Measures against skin contact**

- (a) Workers who are likely to come in contact with liquid Benzene or liquid substances containing Benzene shall be provided with suitable gloves, aprons, boots and where necessary, vapour-tight chemical goggles made of material not affected by Benzene or its vapors.
- (b) The protective wear referred to in sub-clause (a) shall be maintained in good condition and inspected regularly.

#### **6. Labelling**

Every container holding Benzene or sub-stances containing Benzene shall have the word "Benzene" and approved danger symbols clearly visible on it and shall also display information on Benzene content, warning about leaky and warning about inflammability of the chemical.

#### **7. Improper use of Benzene**

- (a) The use of Benzene or substances containing Benzene by workers for cleaning their hands or their work clothing shall be prohibited;
- (b) Workers shall be instructed on the possible dangers arising from such misuse.
- (c)

#### **8. Prohibition of consuming food, etc., in workrooms**

No worker shall be allowed to store or consume food or drink in the workroom in which Benzene or substances containing Benzene are manufactured, handled, or used. Smoking and chewing tobacco or pan shall be prohibited in such workrooms.

#### **9. Instruction as regards risks**

Every worker on his first employment shall be fully instructed on the properties of Benzene or substances containing Benzene which he has to handle and of the dangers involved. Workers shall also be instructed on the measures to be taken to deal with in an emergency.

#### **10. Cautionary notices**

Cautionary notices in the form specified in Appendix B and presented in the language easily read and understood by the majority of the workers shall be displayed in prominent places in the workrooms where Benzene or substances containing Benzene are manufactured, handled or used.

### **11. Washing facilities, cloak-room and mess-room**

In factories in which Benzene or substances containing Benzene are manufactured, handled or used, the Occupier shall provide and maintain in clean state and in good repair

- (a) Washing facilities under cover of the standard of atleast one tap for every 10 persons having constant supply of water with soap and a clean towel provided individually to each worker if so ordered by the Inspector-cum-Facilitator ;
- (b) A cloak-room with lockers for each worker, having two compartments - one for street-clothing and one for work-clothing;
- (c) A mess-room furnished with tables and benches with means for warming food, provided that where a canteen or other proper arrangements exist for the workers to take their meals, the requirements of mess-room shall be dispensed with.

### **12. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health register **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

### **13. Medical Examination by the Medical officer**

- (1) Every worker employed in processes mentioned in paragraph 1, shall be examined by a Medical officer within 15 days of his first employment. Such examination shall include tests for detection of Phenol in urine and determination of urinary sulphide ratio and C.N.S. and Haematological tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical officer.
- (2) Every worker employed in the said processes shall be re-examined by a Medical officer atleast once in every twelve calendar months and such examinations shall, wherever the Medical officer considers appropriate, include all the tests specified in sub-paragraph (1). Further, every worker shall also be examined once in every three months by the factory Medical Officer.
- (3) The Medical officer after examining a worker, shall issue a certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Medical officer in a Health Register in **Form XXXIII**.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) If at any time the Medical officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the workers, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Medical officer, after further examination, again certifies him fit for employment in those processes.

## **APPENDIX A**

**[See Clause 3(b)]**

1. Production of Benzene
2. Process where Benzene is used for chemical synthesis.
3. Motor spirits (used as fuel)

## **APPENDIX B**

**(See Clause II)**

- (a) The hazards—
- (i) Benzene and substances containing Benzene are harmful;
  - (ii) Prolonged or repeated breathing of Benzene vapors may result in acute or chronic poisoning;
  - (iii) Benzene can also be absorbed through skin which may cause skin and other diseases
- (b) The preventive measures to be taken
- (i) Avoid breathing of benzene vapors;
  - (ii) Avoid prolonged or repeated contact of benzene with the skin;
  - (iii) Remove benzene soaked or wet clothing promptly;
  - (iv) If any time you are exposed to high concentration of benzene vapors and exhibit the sign and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your occupier;
  - (v) Keep all the containers of benzene closed;
  - (vi) Handle, use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor;
  - (vii) Maintain good house-keeping;
- (c) The protective equipment to be used
- (i) the respiratory protective equipment in places where benzene vapors are present in high concentration;
  - (ii) In emergency, use self-generating oxygen mask or oxygen or air cylinder masks;
  - (iii) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and body parts.
- (d) The first-aid measure to be taken in the case of acute benzene poisoning.
- (i) Remove the clothing immediately if it is wetted with benzene.
  - (ii) If liquid benzene enters eyes, flush thoroughly for atleast fifteen minutes with clean running water and immediately secure medical attention.
  - (iii) In case of usual exposure to benzene vapour, call a physician immediately. Until he arrives do the following
- If the exposed person is conscious:
- (A) Move him to fresh air in open;
  - (B) Lay down without a pillow and keep him quiet and warm.
- If the exposed person is unconscious
- (a) Lay him down preferably on the left side with the head low;
  - (b) Remove any false teeth, chewing gum, tobacco or other foreign objects which may be in his mouth;
  - (c) Provide him artificial respiration in case difficulty is being experienced in breathing;
  - (d) In case of shallow breathing or cyanosis (blueness of skin, lips, ears, finger nails beds) he should be provided with medical oxygen or oxygen carbondi oxide mixture. If needed, he should be given artificial respiration. Oxygen should be administered by a trained person only.

## **SCHEDULE-AO**

**(See rule 96 (2) & (4))**

### **OPERATIONS INVOLVING HIGH NOISE AND VIBRATION LEVELS**

#### **Part-A**

#### **High Noise Levels**

#### **1. Application:-**

This Part of the schedule shall apply to all operations in any manufacturing process having high noise level.

#### **2. Definitions.-**

For the purpose of this schedule, -

- (a) "Noise" means any unwanted sound;
- (b) "High noise level" means any noise level measured on the A-weighted scale is 85 dB or above;
- (c) "Decibel" means one-tenth of "Bel" which is the fundamental divisions of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of "Bels" denoting such a ratio being the logarithm to the base the of 10 of this ratio. The noise level (or the sound pressure level) 6 corresponds to a reference pressure of  $20 \times 10$  Newton per square meter or 0.0002 dynes per square centimeter which is the threshold of hearing, that is, the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviated form is dB;
- (d) "Frequency" is the rate of pressure variations expressed in cycles per second or hertz;
- (e) "dBA" refers to sound level in decibels as measured on a sound level meter operating on the A-weighting net work with slow meter response; and
- (f) "A-weighting" means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measured by an instrument reflects the actual response of the human ear to the sound measured.

#### **3. Protection against noise.-**

- (1) In every factory, suitable engineering control or administrative measures shall be taken to ensure, so far as is reasonably practicable, that no worker is exposed to sound levels exceeding the maximum permissible noise exposure levels specified in Tables 1 and 2

**TABLE 1**

PERMISSIBLE EXPOSURE IN CASES OF CONTINUOUS NOISE.

Total time of exposure (continuous or a number of short term exposures) pressure level in or a number	Sound of dBA per day, in hours.
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
¾	107
½	110
¼	115

**Explanation:-**

- (1) No exposure in excess of 110 dBA is to be permitted.
- (2) For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

TABLE 2

PERMISSIBLE EXPOSURE LEVELS OF IMPULSIVE OR IMPACT NOISE.

Peak sound pressure level in dB	Permitted number of impulses or impact per day.
140	100
135	315
130	1000
125	3160
120	10000

**Explanations.-**

1. Exposure in excess of 140 dB peak sound pressure level is permitted.
2. For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses or impacts per day is to be determined by extrapolation on a proportionate basis.
- (2) For the purposes of this part of the schedule, if the variations in the noise level involve maximum at intervals of one second or less, the noise is to be considered as a continuous one and the criteria given in Table 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in Table 2 would apply.
- (3) When the daily noise exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fractions.

$$C_1 + C_2 + \dots + C_n$$

exceeds unit p-1

$$T_1 T_2 T_n$$

Where the C<sub>1</sub>, C<sub>2</sub> etc. indicate the total time of actual exposure at a specified noise level and T<sub>1</sub>, T<sub>2</sub>, etc. denote the time of exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculation.

- (4) (a) Where it is not possible to reduce the noise exposure to the levels specified in the Tables in sub - paragraph 1 of paragraph 3 by reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures, and each worker so exposed shall be provided with suitable ear protectors as per relevant National or International Standards so as to reduce the exposure to noise to the levels specified in the Tables in sub - paragraph 1 of paragraph 3.
- (b) The Occupier shall provide personal hearing protectors to the workers.-
  - (i) so as to eliminate the risk to hearing or to reduce the risk to as low a level as is reasonably practicable.
  - (ii) after consultation with the employees concerned or their representative.
  - (iii) ensure the hearing protectors is full and properly fitted, periodically checked for the effectiveness, used
  - (iv) and maintained in good working order and repair.
  - (v) ensure that workers are given periodical training in the use, care and

maintenance of the Personal hearing protectors.

- (5) Where the ear protectors provided in accordance with sub-paragraph 3 of paragraph 4 and worn by a worker cannot Sill attenuate the noise reaching near his ear, as determined by subtracting the attenuation value in dBA of the ear protectors concerned from the measured sound pressure level, to a level permissible under as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in the Tables in sub - paragraph 1 of paragraph 3.

- (6) (a) In all cases where the prevailing sound levels exceed the permissible levels specified in the Tables in sub - paragraph 1 of paragraph 3 there shall be administered an effective hearing conservation program which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise levels or by transferring them to places where noise levels are relatively less or by any other suitable means.

(b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in the Tables in sub - paragraph 1 of paragraph 3 shall be subjected to an auditory examination by a Medical officer within 14 days of his first employment and thereafter, shall be re-examined atleast once in every 12 months. Such initial and periodical examinations shall include tests which the Medical officer may consider appropriate and shall include determination of auditory thresholds for pure tones of 125, 250, 500, 1000, 2000,4000and 8000 cycles per second.

## **Part-B**

### **High Vibration Levels**

#### **1. Applications:-**

This Part of the Schedule shall apply to all operations in a manufacturing part of the process having high undesired vibrations.

#### **2. Definition .-**

- (a) "daily exposure" means the quantity of mechanical vibration to which a worker is exposed during a working day, which takes account of the magnitude and duration of the vibration;
- (b) "Vibration" means a mechanical phenomenon where by oscillations occur about equilibrium point. The oscillations may be periodic or random;
- (c) "high vibration" means any exposure greater than the exposure limit value and action value specified in paragraph - 3;
- (d) "exposure action value" means the level of daily exposure set out in paragraph-3 for any worker which, if reached or exceeded, requires specified action to be taken to reduce risk;
- (e) "exposure limit value" means the level of daily exposure for any worker which must not be exceeded, as specified in paragraph-3;
- (f) "hand-arm vibration" means mechanical vibration which is transmitted into the hands or arms during a work activity as described in sub - paragraph-(1) of paragraph 3 ;
- (g) "mechanical vibration" means vibration occurring in a piece of machinery or equipment or in a vehicle as a result of its operation; and
- (h) "whole-body vibration" means mechanical vibration which is transmitted into the body, when seated or standing, through the supporting surface, during a work activity or as described in sub - paragraph-(2) of paragraph 3.

#### **3. Exposure limit values and action values:-**

- (1) For hand-arm Vibration.-
  - (a) the daily exposure limit value is 5 m/s<sup>2</sup> A(8);
  - (b) the daily exposure action value is 2.5 m/s<sup>2</sup> A(8), and daily exposure shall be ascertained on the basis set out in the relevant National/International



Standards specified in table 1 below.

(2) For whole body vibration.-

(a) the daily exposure limit value is  $1.15 \text{ m/s}^2 \text{ A}(8)$ ;

(b) the daily exposure action value is  $0.5 \text{ m/s}^2 \text{ A}(8)$ , and daily exposure shall be ascertained on the basis set out in the relevant National / International Standards.

**TABLE -1**

The Threshold Limit Values (TLVs) for exposure of the hand to vibration in X, Y or Z direction of axes in the three dimensional system shall be as given below:

*Total Daily Exposure Duration (hours). Maximum value of frequency weighted acceleration ( $\text{m/s}^2$ ) in any direction.*

4 to less than 8 hours 4

2 to less than 4 hours 6

1 to less than 2 hours 8

less than 1 hour 12

(3) Assessment of vibration exposure shall be made for each applicable direction (X, Y, Z) since vibration is a vector quantity (magnitude and direction). In each direction, the magnitude of the vibration during normal operation of the power tool, machine or work piece should be expressed by the root-mean-square (RMS) value of the frequency - weighted component acceleration, in units of meter per second squared ( $\text{m/s}^2$ ).

**4. Assessment of risk to health due to vibration at the work Place:-**

- (1) An occupier who carries out work which is liable expose any worker from vibration to shall make a suitable and sufficient assessment of the risk created by that work to the health and safety of those and the risk assessment shall identify the control measures that need to be taken.
- (2) The risk assessment should be reviewed whenever it is felt the changes in the process makes the earlier risk assessment no longer valid.

**5. Engineering Control measures:-**

- (1) The occupier shall ensure that risk from the exposure of workers to vibration is either eliminated at source or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable.
- (2) Where it is not reasonably practicable to eliminate risk at source pursuant to sub - paragraph 1 and an exposure action value is likely to be reached or exceeded, the employer shall reduce exposure to as low a level as is reasonably practicable by establishing and implementing a program of engineering control measures which are appropriate to this type of activity.
- (3) The occupier shall ensure that the workers are provided with the following measures:-
  - (a) work equipment of appropriate ergonomic design which, taking account of the work to be done, produces the least possible vibration;
  - (b) the provision of auxiliary equipment which reduces the risk of injuries caused by vibration; and install appropriate maintenance programmes for work equipment, the workplace and workplace systems;
- (4) Subject to above sub -paragraphs, the employer shall ensure that his employees are not exposed to vibration above an exposure limit value; and shall take necessary to identify the reasons for the limit being exceeded and take appropriate steps to reduce the exposure to vibration to below limit value.

Provided that where the exposure of an employees to vibration is usually below the exposure action value but varies markedly from time to time and may

occasionally exceed the exposure limit value.

Provided further that any exposure to vibration averaged over one week is less than the exposure limit value and there is evidence to show that the risk from the actual pattern of exposure is less than the corresponding risk from constant exposure at the exposure limit value; and that the risk is reduced to as low a level as is reasonably practicable, taking into account the special circumstances.

#### **6. Medical Examination:-**

- (1) The occupier shall ensure that the workers who are likely to be exposed to vibration at above exposure action value are subjected to periodical medical examination once in a year. The medical examination shall include general and physical examination as well as special test for Reynaud's phenomenon.
- (2) The health record of workers shall be maintained by the occupier for a period of five years from the date of last test and produce to the Inspector-cum-Facilitator on demand.
- (3) If at any time the Medical officer is of the opinion that the worker is no longer fit to work in the said process on the ground that continuance during would involve danger to the health of the worker he shall make a record of his findings in the certificate of fitness in **Form XXXIV** and the health register in **Form XXXIII**. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person declared unfit in such circumstances shall be provided with alternate placement facility unless he is fully incapacitated in the opinion of the Medical officer in which case the person affected shall be suitably rehabilitated.

#### **7. Personal Protective equipment.-**

- (1) The occupier shall ensure that the workers who are likely to be exposed to high level of vibration are provided with appropriate Personal Protective Equipment (PPE) and protective clothing conforming to national or international standards. Such Personal Protective Equipment should include hand gloves and safety shoes. The protective clothing shall be able to protect the workers from cold and damp.
- (2) The Occupier shall ensure that workers are given periodical training in the use care and maintenance of the Personal Protective Equipment.

#### **8. Administrative Control Measures.-**

- (1) The occupier shall ensure that as far as reasonably practicable as all necessary control measures are taken to ensure that the unwanted vibrations do not affect the health of the workers employed in the process to which this part of schedule apply.
- (2) The occupier shall provide all workers with information, instruction and training to be adopted to limit the exposure limit values and action values as set out in paragraph -3.
- (3) Without prejudice to the generality of sub-paragraph 2 above, the information, instruction and training provided under that the said sub - paragraph shall include.-
  - (a) the exposure limit values and action values set out in paragraph 3;
  - (b) safe working practices to minimise exposure to vibration;
  - (c) suitable and sufficient information and training for employees, such that work equipment may be used correctly and safely, in order to minimise their exposure to vibration;
  - (d) limitation of the duration and magnitude of exposure to vibration;
  - (e) appropriate work schedules with adequate rest periods; and
  - (f) The information, instruction and training required by sub - paragraph (2) shall be updated to take account significant changes in the type of work carried out or the working methods used by the employer.
- (4) The Occupier shall display pictorial cautionary notices/warning signs at

conspicuous places where there are possibilities of workers being exposed to undesired high vibrations.

#### **SCHEDULE-AP**

**(See rule 96 (2) & (4))**

### **MANUFACTURE OR MANIPULATION OF DANGEROUS PESTICIDES**

#### **1. Application**

This schedule shall apply in respect of all factories or any part thereof in which the process of manufacture or manipulation of dangerous pesticide thereafter referred to as the said manufacturing process) is carried on.

#### **2. Definition**

For the purpose of this schedule

- (a) "dangerous pesticides" means any product proposed or used for controlling, destroying or repelling any pest or for preventing growth or mitigating effects of such growth including any of its formulations which is considered toxic under and is covered by the Insecticides Act, 1968 and the rules made there under and any other products as may be notified from time to time by the State Government;
- (b) "manipulation" includes mixing, blending, formulating, filling, emptying, packing or otherwise handling ;
- (c) "efficient exhaust draught" means localized mechanical ventilation for removal of smoke, gas, vapour dust, fume or mist so as to prevent them from escaping into the air of any workroom in which work is carried on. No exhaust draught shall be considered efficient if it fails to remove smoke generated at the point where such gas, fume, dust, vapour or mist originates from the processes;
- (d) "first employment" shall mean first employment in any manufacturing process to which this schedule applies and shall also include re-employment in the said manufacturing process following any cessation of employment for a continuous period exceeding three calendar months ; and

#### **3. Instruction to workers**

Every worker on his first employment shall be fully instructed on the properties including dangerous properties of the chemicals handled in the said manufacturing process and the hazards involved. The employees shall also be instructed in the measures to be taken to deal with any emergency. Such instructions shall be repeated periodically.

#### **4. Cautionary notice and placards**

Cautionary notices and placards in the form specified in the Appendix to this Schedule and printed in the language of the majority of the workers shall be displayed in all work places in which said manufacturing process is carried on so that they can be easily and conveniently read by the workers. Arrangements shall be made by the occupier of the factory to periodically instruct the workers regarding the health hazards arising in the said manufacturing process and methods of protection. Such notices shall include brief instructions regarding the periodical clinical tests required to be undertaken for protecting health of the workers.

#### **5. Food, drink and smoking prohibited**

- (1) No food, drink, tobacco, pan or supari shall be brought into or consumed by any worker in any workroom in which the said manufacturing process is carried out.
- (2) Smoking shall be prohibited in any workroom in which the said manufacturing process is carried out.

## **6. Protective clothing and protective equipment**

- (1) Protective clothing consisting of long pants and shirts or overalls with long sleeves and head coverings shall be provided for all workers employed in the said manufacturing process.
- (2) (a) Protective equipment consisting of rubber gloves, gum boots, rubber aprons, chemical safety goggles and respirators shall be provided for all workers employed in the said manufacturing process.  
(b) Gloves, boots, aprons shall be made from synthetic rubber where a pesticide contains oil.
- (3) Protective clothing and equipment shall be worn by the workers supplied with such clothing and equipment.
- (4) Protective clothing and equipment shall be washed daily from inside and outside if the workers handle pesticides containing nicotine or phosphorous and shall be washed frequently if handling other pesticides.
- (5) Protective clothing and equipment shall be maintained in good repair.

## **7. Floors and work-benches**

- (1) Floors in every work-room where dangerous pesticides are manipulated shall be of cement or other impervious material giving a smooth surface.
- (2) Floor shall be maintained in good repair, provided with adequate slope leading to a drain and thoroughly washed once a day with hose pipe.
- (3) Work-benches where dangerous pesticides are manipulated shall be made of smooth, non-absorbing material preferably stainless steel and shall be cleaned atleast once daily.

## **8. Spillage and waste**

- (1) If a dangerous pesticide during its manipulation splashes or spills on the work-bench, floor or on the protective clothing worn by a worker, immediate action shall be taken for thorough decontamination of such areas or articles.
- (2) Cloth, rags, paper or other material soaked or soiled with a dangerous pesticide shall be deposited in a suitable receptacle with tight fitting cover. Contaminated waste shall be destroyed by burning atleast once a week.
- (3) Suitable deactivating agents, where available shall be kept in a readily accessible place for use while attending to a spillage.
- (4) Easy means of access shall be provided to all parts of the plant for cleaning, maintenance and repairs.

## **9. Empty containers used for dangerous pesticides**

Containers used for dangerous pesticides shall be thoroughly cleaned of their content and treated with an inactivating agent before being descended or destroyed.

## **10. Manual handling**

- (1) A dangerous pesticide shall be required or allowed to be manipulated by and except by means of a long handled scoop.
- (2) Direct contact of any part of the body with a dangerous pesticide during its manipulation shall be avoided.

## **11. Ventilation**

- (1) In every workroom or area where a dangerous pesticide is manipulated, adequate ventilation shall be provided at all times by the circulation of fresh air.
- (2) Unless the process is completely enclosed, the following operations during manipulation of a dangerous pesticide shall not be undertaken without an efficient exhaust draught
  - (a) emptying a container holding a dangerous pesticide;

- (b) blending a dangerous pesticide;
  - (c) preparing a liquid or powder formulation containing a dangerous pesticide; and
  - (d) changing or filling a dangerous pesticide into a container, tank hopper or machine or small sized containers.
- (3) In the event of a failure of the exhaust or draught provided on the above operation, the said operations shall be stopped forthwith.

#### **12. Time allowed for washing**

- (1) Before each meal and before the end of the day's work atleast ten minutes in addition to the regular rest interval shall be allowed for washing to each worker engaged in the manipulation of dangerous pesticide.
- (2) Every worker engaged in the manipulation of dangerous pesticides shall have a thorough wash before consuming any food and also at the end of the day's work.

#### **13. Washing and bathing facilities**

- (1) There shall be provided and maintained in a dean state and in good repair for the use of all workers employed in the factory where the said manufacturing process is carried on, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 5 persons employed.
- (2) The washing places shall have stand pipes placed at intervals of not less than one meter.
- (3) Not less than one half of the total number of washing places shall be provided with bathrooms.
- (4) Sufficient supply of clean towels made of suitable material shall be provided :  
Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector-cum-Facilitator.
- (5) Sufficient supply of soap and nail brushes shall be provided.

#### **14. Cloakroom**

There shall be provided and maintained for the use of all workers employed in the factory where the said manufacturing process is carried on:

- (a) a cloakroom for clothing put off during working hours with adequate arrangements for drying clothing, if wet and
- (b) separate and suitable arrangements for the storage of protective clothing provided under paragraph 7.

#### **15. Mess-room**

- (1) There shall be provided and maintained for the use of all workers employed in the factory in which the said manufacturing process is carried on and remaining on the premises during the rest intervals, a suitable mess-room which shall be furnished with --
  - (a) sufficient tables and benches with back rest, and
  - (b) adequate means for warming food.
- (2) The mess room shall be placed under the charge of a responsible person and shall be kept clean.

#### **16. Manipulation not to be undertaken**

Manufacture or manipulation of a pesticide shall not be undertaken in any factory unless a certificate regarding its dangerous nature or otherwise is obtained from the Chief Inspector-cum-Facilitator.

#### **17. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified Medical Practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the

Chief Inspector-cum-Facilitator; and

- (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **18. Medical Examination by Medical Officer**

- (1) Every worker employed in the processes mentioned in paragraph 1 shall be examined by a Medical Officer within 15 days of his first employment. Such examination in respect of Halogenated Pesticides, shall include tests for determination of the chemical in blood and in fat tissues, EEG abnormalities and memory tests, in respect of organo phosphorous compounds, such examination shall include test for depression of cholinesterase in plasma and red blood cells. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the said processes shall be re-examined by a Medical Officer atleast once in every six calendar months. Such examinations shall, wherever the Medical Officer considers appropriate, include the tests specified in sub-paragraph (1). Further every worker employed in the said processes shall also be examined once in every three months by the factory Medical Officer.
- (3) The Medical Officer after examining a worker, shall issue a certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. The record of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of these tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**.
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the Health Register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit to work in the said processes. The person so suspended from the process shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) shall be re-employed or permitted to work in the said processes unless the Medical Officer, after further examination, again certifies him fit for employment in those processes.

#### **APPENDIX**

#### **(SEE PARAGRAPH 4)**

#### **CAUTIONARY NOTICE**

#### **INSECTICIDES AND PESTICIDES**

- 1. Chemicals handled in this plant are poisonous substances
- 2. Smoking, eating food or drinking, chewing tobacco in this area is prohibited. No food stuff or drink shall be brought in this area.
- 3. Some of these chemicals maybe absorbed through skin and may cause poisoning.
- 4. A good wash shall be taken before meals.
- 5. A good bath shall be taken at the end of the shift.
- 6. Protective clothing and equipment supplied shall be used while working in this area.
- 7. Containers of pesticides shall not be used for keeping food stuffs.
- 8. Spillage of the chemicals on any part of the body or on the floor or work bench

- shall be immediately washed away with water.
9. Clothing contaminated due to splashing shall be removed immediately.
  10. Scrupulous cleanliness shall be maintained in this area.
  11. Do not handle pesticides with bare hands; use scoops provided with handle.
  12. In case of sickness like nausea, vomiting, giddiness, the Occupier should be informed who will make necessary arrangements for treatment.
  13. All workers shall report for the prescribed medical tests regularly to protect their own health.

## **SCHEDULE-AQ**

**(See rule 96 (2) & (4))**

### **MANUFACTURE OF RAYON BY VISCOSE PROCESS**

#### **1. Definitions**

For the purpose of this schedule

- (i) "approved" means approved for the time being in writing by the Chief Inspector-cum-Facilitator ;
- (ii) "breathing apparatus" means a helmet or face piece with necessary connections by means of which the person using it in a poisonous, asphyxiating or irritant atmosphere breathes unpolluted air ; or any other approved apparatus ;
- (iii) "churn" means the vessel in which alkali cellulose pulp is treated with carbon disulphide;
- (iv) "dumping" means transfer of cellulose xanthate from a dry churn to a dissolver ;
- (v) "efficient exhaust draught" means a localized ventilation by mechanical means for the removal of any gas or vapour, so as to prevent it from escaping into the air or any place in which work is carried on. No draught shall be deemed to be efficient if it fails to control effectively any gas or vapour generated at the point where such gas or fume originates;
- (vi) "fume process" means any process in which carbon disulphide or hydrogen sulphide is produced, used or given off;
- (vii) "life belt" means a belt made of leather or other suitable material which can be securely fastened round the body with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man ;
- (viii) "protective equipment" means apron, goggles, face shields, footwear, gloves and overalls made of suitable materials.

#### **2. Ventilation**

- (1) In all workrooms where a fume process is carried on, adequate ventilation by natural or mechanical means shall be provided so as to control, in association with other control measures, the concentration of carbon-disulphide and hydrogen sulphide in the air of every work environment within the permissible limits.
- (2) Notwithstanding the requirements in sub-paragraph (1), an efficient exhaust draught shall be provided and maintained to control the concentration of carbon-disulphide and hydrogen sulphide in the air at the following locations :
  - (a) dumping hoppers of dry churns;
  - (b) spinning machines;
  - (c) trio rollers and cutters used in staple fiber spinning ;
  - (d) hydro-extractors for yarn cakes;
  - (e) after treatment processes ; and
  - (f) spin baths.
- (3) In so far as the spinning machines and trio rollers and cutters used in staple fiber spinning are concerned, they shall be, for the purpose of ensuring the effectiveness of the exhaust draught to be provided as required in sub-paragraph

- (1), enclosed as fully as practicable and provided with suitable shutters in sections to enable the required operations to be carried out without giving rise to undue quantities of carbon-di-sulphide and hydrogen sulphide escaping to the work environment
- (4) No dry churn shall be opened after completion of reaction without initially exhausting the residual vapors of carbon-di- sulphide by operation of a suitable and efficient arrangement for exhausting the vapors which shall be continued to be operated as long as the churn is kept opened.
- (5) Whenever any ventilation apparatus normally required for the purpose of meeting the requirements in sub-paragraphs (2), (3) and (4) is ineffective, fails, or is stopped for any purpose whatsoever, all persons shall be required to leave the work areas where the equipment or processes specified in the above said sub-paragraphs are in use, as soon as possible, and in any case not later than 15 minutes after such occurrence.
- (6) (i) All ventilating systems provided for the purposes as required in sub-paragraphs (2), (3) and (4) shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations of test shall be rectified forthwith.
- (ii) A register containing particulars of such examinations and tests, and the state of the systems and the repairs or alterations (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector-cum-Facilitator.

### **3. Waste from spinning machines**

Waste yarn from the spinning machines shall be deposited in suitable containers provided with close fitting covers. Such waste shall be disposed off as quickly as possible after decontamination.

### **4. Linking of dry churns**

The inside surface of all dry churns shall be coated with a non-sticky paint so that cellulose xanthate will not stick to the surface of the churn, such coating shall be maintained in good condition.

### **5. Air monitoring**

- (1) To ensure the effectiveness of the control measures, monitoring of carbon-disulphide and hydrogen sulphide in air shall be carried out once atleast in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purposes.
- (2) For the purpose of the requirement in sub-paragraph (1), instantaneous gas detector tubes shall not be used. Samples shall be collected over a duration of not less than 10 minutes and analyzed by an approved method. The locations where such monitoring is to be done shall be as directed by the Inspector-cum-Facilitator.
- (3) If the concentration of either carbon disulphide or hydrogen sulphide exceeds the permissible limits for such vapour or gas as laid down in Rule 91 suitable steps shall be taken for controlling the concentrations in air of such containers. A report of such occurrences shall be sent to the Chief Inspector-cum-Facilitator forthwith.

### **6. Prohibition to remain in fume process room**

No person during his intervals for meal, or rest shall remain in any room wherein fume process is carried on.

### **7. Protective equipment**

- (1) The occupier shall provide and maintain in good condition protective equipment as specified in the Table for use of persons employed in the processes referred to therein.



**THE TABLE**

<b>Process</b>	<b>Protective equipment</b>
(1)	(2)
1. Dumping	Overalls, face-shields, gloves and footwear - all made of suitable material
2. Spinning	Suitable aprons, gloves and footwear
3. Process involving or likely to involve contact with viscose solution	Suitable gloves and footwear
4. Handling of Sulphur	Suitable Chemical goggles
5. Any other process involving contact with hazardous chemicals	Protective equipment as may be directed by the Chief Inspector-cum-Facilitator by an order in writing

- (2) A suitable room, rooms or lockers shall be provided exclusively for the storage of all the protective equipment supplied to workers and no such equipment shall be stored at any place other than the room, rooms or lockers so provided.

### **8. Breathing apparatus**

- (1) There shall be provided in every factory where fume process is carried on, sufficient supply of,
- (a) breathing apparatus;
  - (b) oxygen and suitable appliances for its administration ; and
  - (c) life belts.
- (2) (i) The breathing apparatus and other appliances referred to in sub-paragraph (1) shall be maintained in good condition and kept in appropriate locations so as to be readily available.
- (ii) The breathing apparatus and other appliances referred to in clauses (a) and (b) of sub-paragraph (1) shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by a responsible person.
- (iii) A record of the maintenance and of the condition of the breathing apparatus and other appliances referred to in sub- clause (1) shall be entered in a register provided for that purpose which shall be readily available for inspection by an Inspector-cum-Facilitator.
- (3) Sufficient number of workers shall be trained and periodically re-trained in the use of breathing apparatus and administering artificial respiration so that atleast two such trained persons would be available during all the working hours in each room in which (tune process is carried on).
- (4) Breathing apparatus shall be kept properly labeled in clean, dry, light proof cabinets and if liable to be affected by fumes, shall be protected by placing them in suitable containers.
- (5) No person shall be employed to perform any work specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under that sub-paragraph unless he has been fully instructed in the proper use of that equipment.
- (6) No breathing apparatus provided in pursuance of subparagraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

### **9. Electric fittings**

All electric fittings in any room in which carbon-disulphide is produced, used or given off or is likely to be given off into the work environment, other than a spinning room,

shall be of flame-proof construction and all electric conductors shall either be enclosed in metal conduits or be lead sheathed.

#### **10. Prohibition relating to smoking, etc**

No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in a room in which fume process is carried on. A notice in the language understood by the majority of the workers shall be posted in prominent locations in the plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms.

Provided that fire, naked light or other means of producing a naked light or spark may be carried on in such room only when required for the purpose of the process itself under the direction of a responsible person.

#### **11. Washing and bathing facilities**

- (1) There shall be provided and maintained in a clean state and in good repair for the use of all workers employed in the processes covered by the schedule, adequate washing and bathing places having a constant supply of water under cover at the rate of one such place for every 25 persons employed.
- (2) The washing places shall have stand pipes placed at intervals of not less than one meter.
- (3) Not less than one half of the total number of washing places shall be provided with bathrooms.
- (4) Sufficient supply of clean towels made of suitable material shall be provided:  
Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector-cum-Facilitator.
- (5) Sufficient supply of soap and nail brushes shall be provided.

#### **12. Rest room**

- (1) A rest room shall be provided for the workers engaged in doffing operations of filament yarn spinning process.
- (2) Such rest room shall be provided with fresh air supply and adequate seating arrangement.

#### **13. Cautionary notice and instructions**

- (1) The following cautionary notice shall be prominently displayed in each fume process room:  
-

##### **CAUTIONARY NOTICE**

1. Carbon disulphide (CS) and Hydrogen Sulphide (H<sub>2</sub>S) which may be present in this room are hazardous to health.
2. Follow safety instructions.
3. Use protective equipment and breathing apparatus as and when required.
4. Smoking is strictly prohibited in this area.

This notice shall be in a language understood by the majority of the workers and displayed where it can be easily and conveniently read. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

- (2) Arrangements shall be made to instruct each worker employed in any room in which a fume process is carried on regarding the health hazards connected with their work and the preventive measures and methods to protect themselves. Such instructions shall be given on his first employment and repeated periodically.
- (3) Simple and special instructions shall be framed to ensure that effective measures will be carried out in case of emergency involving escape of carbon disulphide and hydrogen sulphide. Those instructions shall be displayed in the concerned areas and

workers shall be instructed and trained in the actions to be taken in such emergencies.

#### **14. Medical facilities and records of examinations and tests**

- (1) The occupier of each factory to which the schedule applies, shall
  - (a) employ a qualified medical officer for medical surveillance of the workers employed in the fume process whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical officer all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examination and appropriate tests carried out by the said medical officer shall be maintained in Health register **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **15. Medical examination by the Medical Officer**

- (1) Every worker employed in the finite process shall be examined by a Medical Officer within 15 days of his first employment. Such examination shall include tests for estimation of exposure co-efficient (iodine azide test in urine) and cholesterol, as well as Electrocardiogram (ECG) and Central Nervous System (CNS) tests. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the fume process shall be re-examined by a Medical Officer atleast once in every twelve calendar months. Such examination shall wherever the Medical Officer considers appropriate, include all the tests as specified in sub-paragraph (1).
- (3) The Medical Officer after examining a worker, shall issue a certificate of fitness in **Form XXXIV**. The record of re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Occupier of the factory. The record of each examination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Occupier of the factory. The records of each examination carried out under sub-paragraphs (1) and (2), including the nature and the results of the tests, shall also be entered by the Medical Officer in a health register in **Form XXXIII**.
- (4) The Certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the fume process on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the fume process.  
The persons so suspended from the process shall be provided with alternative placement facilities unless he is fully incapacitated in the opinion of the Medical Officer in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the fume process unless the Medical Officer, after further examination again certifies him fit for employment in such process.

#### **SCHEDULE-AR**

**(See rule 96 (2) & (4))**

#### **FLAMMABLE LIQUEFIED OR COMPRESSED GASES AND HIGHLY FLAMMABLE LIQUIDS**

##### **1. Application**

Provisions of this Schedule shall apply to all factories where flammable liquefied or compressed gases or highly flammable liquids are manufactured, stored, handled used (sic.).

##### **2. Definitions**

For the purposes of this Schedule

- (a) "bulk storage " means bullet or Horton sphere or mounded vessel or portable cylinders used for storage of flammable liquefied or compressed gases or highly flammable liquids, which are having cumulative water storage capacity exceeding one thousand liters;
- (b) "bullet" means a horizontal cylindrical pressure vessel with hemispherical or dished ends used for storage of flammable liquefied or compressed gas;
- (c) "explosive mixture" means a mixture of combustion agent (oxidizing substance in gaseous, liquid or solid state) and a fuel (oxidisable substance in gaseous, liquid or solid state) in such proportions that it could give rise to a very rapid and violent oxidation reaction, liberating more kinetic energy than is dissipated through conduction and convection, ultimately causing practical effect of explosion ;
- (d) "fire proof " means a passive means of protection of a structure or equipment or vessel from exposure to direct fire or flame impingement or prolonged exposure to high intensity radiant thermal flux, by the application of a coating of certain heat-resistant substance or mixture of a specified rating ;
- (e) "fire safe " means a provision of dual seating to control leakage to acceptable level, even after damage, due to fire, as applied to valves
- (f) "flammable compressed gas " means flammable compressed gas as defined in rule 2 of the Static and Mobile Pressure Vessels (Unfired) Rules, 1981 framed under the Explosives Act, 1884 (Central Act IV of 1884) ;
- (g) "flammable liquefied gas " means a flammable gas kept in liquefied state by the application of pressure at normal ambient temperature, 13% (thirteen percentage) or less of which by volume with air forms a flammable mixture or which has a flammable range with air of atleast 12% (twelve percentage) points regardless of the lower flammable limits;
- (h) "gas free " means a condition when the concentration of a flammable gas in an equipment or a vessel is well below the threshold limits (lower explosive limit), so, that it is safe for a man to enter into the equipment or vessel or to conduct "hot work " there, as the case may be ;
- (i) "highly flammable liquid " means any liquid including its solution, emulsion or suspension which when tested in a manner specified by sections 14 and 15 of the Petroleum Act, 1934 (Central Act XXX of 1934) gives off flammable vapors at a temperature less than 32 degrees Centigrade;
- (j) "Horton sphere" means a spherical Pressure Vessel, supported vertically and is used for the storage of flammable liquefied or compressed gas;
- (k) "hot work " means an activity which may produce enough heat or spark to ignite a flammable or explosive mixture;
- (l) "Mounded vessel" means a pressure vessel for the storage of flammable liquefied or compressed as, which is placed above ground and is completely covered by a mound of earth or similar inert material except for nozzles, manhole covers, inspection covers fitted on the top of the vessel ;
- (m) "purging" means an act of replacing the atmosphere inside a vessel or a container by an inert gas in such a manner as to prevent the formation of an explosive mixture.
- (n) "purging into service" means the replacement of air in a closed system by an inert gas and then replacement of the inert gas by the flammable gas, vapour or liquid;
- (o) "purging out of service" means the replacement of normal flammable content of a closed system by an inert gas and then replacement of the inert gas by air to such an extent that it is gas free and safe for any person to work ;
- (p) "remote operated emergency valve" means a shut-off valve capable of remote operation which closes automatically on loss of the actuating power or fire engulfment and which is fire-safe.

### **3. Storage**

Every highly flammable liquid, flammable liquefied or compressed gas used in every factory shall be stored in bulk in suitable fixed storage tank made of adequate fire-resistant construction and located in a safe position under the ground or in the open.

#### 4. Location and spacing

Before selecting the location of any storage vessel, risk analysis study shall be carried out. Based on the risk analysis study, every storage vessel shall be located in the manner specified below:

- (a) the location shall not interfere with the movement of vehicles. The Risk Contour shall not intercept the public places such as assembly points, canteen, rest sheds and similar other locations;
- (b) before locating any storage vessel, the soil- condition shall be assessed for the suitability of the superstructure ;
- (c) the storage vessel shall be sited above ground in open air and well-ventilated place ;
- (d) mounded vessels shall be so located that the manholes and pressure relief valves are in a well-ventilated position;
- (e) the minimum safety distance between the storage vessels and from buildings, boundary or fixed ignition source shall be in accordance with the Static and Mobile Pressure Vessels (Unfired) Rules, 1981, as amended from time to time ;
- (f) the storage vessels shall not be installed one above the other ;
- (g) the bullets shall be so located that their longitudinal axes do not points towards other vessels, vital process equipment, control rooms, loading stations, nearby buildings or storage tanks containing hazardous materials;
- (h) weeds, long grass, deciduous shrubs and trees and any combustible materials shall be removed from the storage vessel area within the licensed premises;
- (i) the storage vessels shall not be located within the blinded enclosure of any heat source or other flammable liquids, gases or oxidizers ;
- (j) the storage vessels, pumping equipment, loading and unloading facilities and vaporizers shall be located in an exclusive fenced compound of atleast 2 meters high along the perimeter of the safety zone'; such fenced compound shall have atleast two gates for the safe exit of persons and vehicles in case, of any emergency ;
- (k) the number of storage vessels in one group shall not exceed six ;
- (l) storage vessels within a group shall be so located that their longitudinal axes are parallel to each other;
- (m) spheres and bullets shall not be grouped together and shall be provided with separate piping manifold, so as to avoid overfilling of a vessel due to gravitation from the other;
- (n) the top surface of the storage vessels installed in a group shall be on the same plane so that the pressure safety valve blow-out from them do not affect the other;
- (o) the flooring of the bullets or spheres shall be sloped in such a way that the spilled liquid or gas from any vessel shall not pass through any other vessel;
- (p) the storage vessels shall not be located in such a way that the high tension electrical cables shall not pass through or near the licensed premises;
- (q) storage vessels shall not be located in places which are susceptible to flooding;
- (r) the grade for the storage vessels shall be elevated slightly above the surrounding terrain in order to ensure complete drainage of water from beneath the bottom of the vessels; and
- (s) every container, vessel or tank used for storing highly flammable liquid or flammable liquefied or compressed gas shall be clearly and in bold letters marked Danger — Highly Flammable Liquid " or - Danger — Flammable liquefied or Compressed Gas ", as the case may be.

#### 5. Design of storage vessels

- (1) **General:** Each static vessel for the storage of flammable liquefied or compressed gas shall be provided with the following finings and instruments which are suitable for use at pressures not less than the design pressure of the vessel and for the temperatures appropriate to the worst operating conditions namely:
  - (a) atleast two pressure safety valves connected independently to the vapour space;
  - (b) two independent liquid level indicators;

- (c) a high level switch with alarm;
  - (d) a pressure gauge, connected to the vapour space; and
  - (e) a temperature gauge for measuring the temperature of the contents of the vessel.
- (2) Vessel connections: In every flammable liquefied or compressed gas storage vessel
- (i) all the connections to the vessel shall be designed and fitted in accordance with the Design Code of Indian Standard-2825 or equivalent duly approved by the Chief Controller of Explosives;
  - (ii) not more than one nozzle shall be provided at its bottom for inlet and outlet purpose, apart from the drainage pipe
  - (iii) the nozzle shall be a full-welded pipe and shall extend to a minimum distance of 3 (three) meters from the shadow of the vessel. A combination of manual and remote operated shut-down valve shall be provided on this bottom nozzle at a distance of atleast 3 (three) meter beyond the shadow of the vessel. The nozzle shall have a slope of 1.5 degree ;
  - (iv) the nozzle shall be stress-relieved along with the vessel ;
  - (v) (sic) there shall not be any flange, instrument tapping or manhole fitted on this nozzle up to the combination of manual and remote operated valve ; and
  - (vi) an excess flow valve shall be provided for the nozzle on the body of the vessel.
- (3) Pressure Safety Valve: In every storage vessel
- (i) the pressure safety valves provided shall be of spring-loaded type (weight-loaded safety valves shall not be used). Each of the pressure safety valves shall have 100% (hundred percent.) relieving capacity;
  - (ii) the pressure safety valves shall be set to discharge at a pressure not more than 110 (one hundred and ten) per cent. of the design pressure of the vessel and shall have a total relieving capacity adequate for limiting the pressure build-up in the vessel not more than 120 (one hundred and twenty) per cent. of the design pressure;
  - (iii) the discharge of the pressure safety valves shall be connected to flare system. if available. In case the flare system is not available, the discharge from the pressure safety valve shall be vented vertically upwards to atmosphere at a minimum elevation of 3 meter above the top of the vessel for effective dispersion of the discharge. A loose-fitting rain cap with a non-sparking chain attached to the vent pipe shall be fitted on top of the pressure safety valve;
  - (iv) an isolation valve shall be provided in between each pressure safety valve and the vessel. The arrangement of such isolation valve shall be so designed as to afford full required capacity flow through atleast one of the pressure safety valves ; and
  - (v) each pressure safety valve shall be visibly marked with the "set pressure" in Kg/Sq.Cm. (gauge) at which it will discharge, with its actual rate of discharge in cubic meter per minute of the gas at a pressure of 120 (one hundred and twenty) per cent. of the design pressure of the vessel.
- (4) Emergency shut-off valve: In every storage vessel
- (i) all liquid and vapour connections, except those for pressure safety valves and the drainage connections of diameter less than 25 (twenty five) mm., shall have an emergency shut-off valve, such as an excess flow check valve or a remote operated valve:  
 Provided that the emergency shut-off valve is not required in cases where the connection to a vessel is not greater than three centimeter in diameter for liquid and eight centimeter in diameter for vapour ;
  - (ii) where the emergency shut-off valve provided is of 'excess flow check valve' type, its closing rate of flow shall be below the rate which is likely to result due to a fracture of the line which it is protecting, calculated under the worst conditions. Excess flow check valve shall have a flow capacity sufficiently above the normal flow requirements to prevent valve chatter.
- (5) Bottom water draw-off or drain valve- In every storage vessel

- (i) there shall be provided two drain valves at the bottom of the vessel between the remote operated valve and the first isolation valve. The length of the pipeline between the two drain valves shall be atleast 0.5 meter to minimize the risk of simultaneous obstruction of both valves due to freezing of any water present in the liquefied gas. The drain connections shall be not more than 50 (fifty) millimeter in diameter;
  - (ii) the first drain valve from the vessel shall be of gate type (throttle type), while the second drain valve shall be of quick shut-off type ;
  - (iii) the material of construction for the drain pipeline and the related connections shall be suitable for cryogenic application.
- (6) Sampling valve: In every storage vessel, two valves with suitable distance-pipe of not less than 0.5 meter in length between them shall be fitted at its bottom between the remote operated valve and the first isolation valve for sampling purpose. (The provision of a distance-pipe is for the purpose of avoiding icing problem in the upstream valve)
  - (7) Liquid level gauging device: In every storage vessel, out of two level indicators provided, one shall be of "float" type and the other shall be of "differential pressure" type in case of Horton Spheres. Magnetic float type gauge shall be used for bullets in the place of "differential pressure" type "High Level" alarm shall be set on the level indicators to operate at not more than 85% (eighty five percent.) of the volumetric capacity of the vessel. An audio-visual indication as regards the high level alarm shall be provided at the normal place of operator's seat.
  - (8) Pressure gauge: In every storage vessel, there shall be provided atleast one pressure gauge, duly calibrated and having a dial range not less than 1.5 times the design pressure, easily visible and designed to show the correct internal pressure at all times. It shall be provided in the vapour space at the top. A suitable stop valve shall be provided in between the vessel and the pressure gauge.
  - (9) Gas sensors: In every storage vessel for flammable liquefied or compressed gas, gas sensors with alarm shall be provided at vulnerable areas and in the event of gas leakage, such sensor shall trip the compressor or pump if in operation.
  - (10) Bonding: Electrical continuity shall be maintained between the flanges by means of bonding in every storage vessel and its pipe lines.
  - (11) Pop off valves: "Pop off" valves shall be provided in between isolation valves on the pipelines carrying flammable liquefied or compressed gases.
  - (12) Capacity of vaporizer: The vaporizer, connected to the flammable liquefied gas storage vessels shall have adequate capacity to meet the required flow rate of flammable liquefied gas in the process.

## **6. Prevention of ignition**

In every location where highly flammable liquid or flammable liquefied or compressed gas is stored, conveyed, handled or used or where there is danger of fire or explosion from accumulation of highly flammable liquid or liquefied compressed gas in air, all practicable measures shall be taken to exclude the sources of ignition. Such precautions shall include the following:

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
- (c) no person shall wear or be allowed to wear any footwear having iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited;
- (e) transmission bolts with iron fasteners shall not be used ; and
- (f) all other precautions, as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks, over heated surfaces of machinery or plant, chemical or

physical-chemical reaction and radiant heat.

#### **7. Enclosed system for conveying highly flammable liquids:**

Wherever it is reasonably practicable, highly flammable liquids shall be conveyed within a factory in totally enclosed system consisting of pipe lines, pumps and similar appliances from the storage tank or vessel to the point of use. Such enclosed system shall be so designed, installed, operated and maintained as to avoid leakage or the risk of spilling.

#### **8. Prohibition of smoking:**

No person shall smoke in any place where a highly flammable liquid or flammable liquefied or compressed gas is present in circumstances that smoking would give rise to a risk of fire. The occupier shall take all practicable measures to ensure compliance with this requirement including display of a bold notices indicating prohibition of smoking at every place where this requirement applies.

#### **9. Fire protection:**

In every factory

- (1) no vehicular traffic shall be permitted within the risk area of lower flammable limit of the highly flammable liquid or flammable liquefied or compressed gas stored. When required, vehicles filled with approved spark arrestors shall only be allowed with valid vehicle entry permit.
- (2) all the vessels used for bulk storage or handling of highly flammable liquid or flammable liquefied or compressed gases shall be protected against the hazards of fire as follows:
  - (a) medium velocity water spray system shall be provided for all above ground storage vessels, cylinder storage or filling or repair sheds, pump houses, bulk lorry and tank wagon gantries;
  - (b) detection of fire for automatic actuation of medium velocity water sprinkler system shall be provided at all critical locations. such as bulk storage, tank truck or tank wagon gantry, pump or compressor house and vapourisers ;
  - (c) medium velocity water sprinkler system shall be based on heat and other detection.
  - (d) Quartzoid Bulb protection designed to blow at 79 (seventy nine) degree centigrade (maximum) shall be provided in open areas or in the sheds ;
  - (e) medium velocity water sprinkler system shall function in such a way that the actuation of fire detectors shall initiate the following:
    - (i) opening of deluge valve ;
    - (ii) audio-visual alarm at the fire pump house or control panel ;
    - (iii) fire siren ; and
    - (iv) the diesel pump will get started based on the "Set pressure" to supplement or to maintain the fire water pressure in the ring main ; and
  - (f) The medium velocity water sprinkler system shall have a minimum spray density of ten liters per minute per square meter in the case of flammable liquefied or compressed gas and in the case of highly flammable liquid it shall have minimum spray density of 3 (three) liters per minute per square meter for the single largest risk area.

For the purpose of calculation of a single risk area, the following shall be taken into account:

- (i) in case of bulk storage, adjoining vessels within the distance of  $R + 30$  (thirty) meter, where  $R$  is the radius of the vessel and 30 (thirty) meter shall be measured from the periphery of the vessel
- (ii) in case of tank lorry gantry, a maximum of 8 (eight) bays shall be taken as a single risk area ; and
- (iii) in case of tank wagon gantry, a minimum of one gantry (600 (six hundred)



Metric Tonnes) shall be taken as a single risk area

- (3)
- (a) a fire water ring main shall be provided all around the locations of storage and handling of flammable liquefied or compressed gases with hydrants or monitors spaced at 30 (thirty) meter centre to centre. Fire hydrants and monitors shall be installed outside the licensed premises;
  - (b) the fire water pressure system shall be designed for a Minimum residual pressure of 7 (seven) Kgf/Sq. Cm. (gauge) at the remotest place of application in the plant ;
  - (c) fire hydrant network shall be provided in closed loops to ensure multi-directional flow in the system. Isolation valves shall be provided to enable isolation of any section of the network without affecting the flow in the rest; and
  - (d) the fire water system in the plant shall be designed to meet the highest fire-water flow requirement of medium velocity water sprinkler for a single largest risk area at a time plus two hundred and eighty eight meter/hour for operating two numbers fire water monitor or supplementary hose requirements.
- (4)
- (a) water for the hydrant service shall be stored in any easily accessible surface of underground concrete reservoir or above ground tank of steel or concrete;
  - (b) the effective fire water storage capacity available for fire-fighting shall be for four hours ; and
  - (c) storage tank or reservoir for fire water shall be in two interconnected compartments to facilitate cleaning and repair.
- (5) Portable fire extinguishers as approved by Bureau of Indian Standards shall be located at convenient places as indicated in the Table below :

**THE TABLE**

<b>AREA</b>	<b>PORTABLE FIRE EXTINGUISHER</b>
<b>(1)</b>	<b>(2)</b>
1. Flammable liquefied gas or storage vessels (each)	2 Numbers 10 Kg. DCP
2. Tank wagon loading or unloading gantries	1 Number 10 Kg. DCP. extinguisher for every 15/20 meters of gantry
3. Tank truck loading or unloading gantries	1 Number 10 Kg. DCP, fire extinguisher in each Bay and t Number 50 Kg. Mobile DCP unit/gantry

The dry chemical powder used in the extinguishers shall be potassium or Urea based or Sodium Bicarbonate as per IS: 4308. The expellant gas ie., N<sub>2</sub>/CO<sub>2</sub> should be of good quality.

#### **10. Loading and unloading facilities for flammable liquefied or compressed gas**

- (1) Loading: In every factory, where the loading of flammable liquefied or compressed gas is carried on, the loading station shall consist of the following:
- (a) a filling line with an isolation valve and check valve ;
  - (b) a vapour return line with a check valve and an isolation valve to be connected back to the storage vessel from which the loading pump is drawing flammable liquefied gas ;
  - (c) suitable loading arm or flexible hoses shall be provided at the end of filling line and vapour return line for connecting to the tank truck vessels or tank wagons ; and
  - (d) suitable thermal pressure relief valve(s) shall be provided between the shut-off valves to protect against excessive pressure which may develop due to thermal expansion of the trapped liquid .
- (2) Unloading: In every factory, where unloading of flammable liquefied or compressed

gas is carried on, the compressor used for unloading of flammable liquefied gases by means of a differential pressure between the receiving and discharging vessels by withdrawing vapour from the receiving vessel and forcing it at high pressure into the discharging vessel shall have the following facilities:

- (a) liquid unloading check valve line with isolation valve; and
  - (b) vapour line with isolation valves ;
- (3) Loading and unloading operations: In every factory, where the loading or unloading of flammable liquefied or compressed gas is carried on
- (a) written operating procedures for loading or unloading operation, clearly defining the safety checks and precautions to be observed as well as the responsibilities of the personnel involved in such operation, shall be prepared both in English and in Kannada and shall be given to them and also displayed at the site;
  - (b) flexible hoses used for transfer of flammable liquefied or compressed gas to or from a tank truck or tank wagon shall be,
    - (i) designed and constructed in accordance with the Static and Mobile Pressure Vessels (Unfired) Rules, 1981;
    - (ii) having a means of identification ; and
    - (iii) periodically checked for electrical and mechanical continuity and recorded in the register;
  - (c) for connecting and disconnecting hoses, only non-sparking type of tools shall be used;
  - (d) the tank truck shall have the starter motor which shall be of non-sparking or flame-proof type;
  - (e) the tank truck shall be positioned on a leveled ground and blocks (checks) shall be placed at front and rear wheels in order to prevent the risk of accidental vehicle movement;
  - (f) the engine of the vehicle shall be stopped and all the electrical equipment shall be switched off, before commencing the loading or unloading operation;
  - (g) before commencing the loading or unloading operation, static charge shall be effectively discharged by bonding and earthing of the storage vessels and the road tankers or wagons;
  - (h) the road tanker or wagon shall be electrically bonded at, specified point to the fixed grounding system;
  - (i) an authorised person shall supervise the transfer operation and respond immediately in the event of an emergency;
  - (j) during loading operation, the pressure within the receiving tank truck vessel shall be observed to ensure that it does not approach the " start-to-discharge " pressure of the relief valve. Filling rate shall be regulated as required;
  - (k) the receiving vessel which is having an internal pressure of less than 1(one) Kg/Sq.Cm (g) shall not be permitted to be filled, such vessel shall be checked for Oxygen content or explosive mixture and purged, if necessary ;
  - (l) filling or transfer operation shall be done only during day time ;
  - (m) filling or transfer operation shall be stopped immediately in the event of—
    - (a) uncontrolled leakage occurring;
    - (b) a fire occurring in the vicinity;
    - (c) lightning and thunder-storm;
  - (n) the "Safe Operating Procedure " for unloading shall be displayed conspicuously in English and Kannada near the unloading area.

## **11. Maintenance and Inspection**

In every factory where highly flammable liquid or flammable liquefied or compressed gas is stored in bulk.

- (1) the storage vessels and the safety fittings and instruments shall be tested periodically as per the requirements under various statutes as applicable and relevant records with the particulars of such testing shall be maintained ;
- (2) loading or unloading hoses shall be tested atleast once in every six months ;
- (3) the earth pits shall be maintained well and the earth resistance shall be measured

- atleast once in every 12 (twelve) months ; and records shall be maintained in this regard ;
- (4) the foundation and supports of the storage vessels shall be checked once in a year for differential settlement due to disturbance in the sub-soil ;
  - (5) the cathodic protection, if provided, shall be monitored periodically and maintained well for its effectiveness ;
  - (6) the gas detection system shall be checked and calibrated periodically ; and
  - (7) the fire water system which includes fire water pumps, fire hydrant or monitor, piping network and water sprinkler or deluge system shall be checked periodically and maintained well for its fail-safe operation.

## **12. Training**

The occupier of every factory in which highly flammable liquid or flammable liquefied or compressed gas is stored in bulk shall ensure that

- (1) the supervisory or managerial personnel are adequately trained in all aspects of safe storage and handling of highly flammable liquid or flammable liquefied or compressed gas as well as disaster control or preparedness and response
- (2) regular raining programmes are conducted in loading or unloading operation, drafting procedure, commissioning and decommissioning procedures,” hot work” permit system, fire-fighting or emergency combat operation, health hazards etc., for
  - (a) regular workers;
  - (b) contract workers; and
  - (c) security staff.
- (3) Full-scale emergency mock drill, simulating leakage of flammable gas and the consequent major fire, are conducted in the plant atleast once in every six months in order to assess the level of preparedness and the adequacy of combat measures. Any deviations or defects observed during such mock-drill shall be rectified forthwith

### **SCHEDULE-AS**

**(See rule 96 (2) & (4))**

## **OPERATIONS IN FOUNDARIES AND FURNACES**

### **1. Application**

Provisions of this schedule shall apply to all parts of factories where any of the following operations or process are carried on:

- (a) The production of iron casting or, as the case may be, steel castings by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by shell moulding or by centrifugal casting and any process incidental to such production;
- (b) the production of non-ferrous castings by casting metal in moulds made of sand, loam, metal, moulding composition or other material or mixture of materials, or by shell mouldings, die-casting (including pressure die-casting), centrifugal casting or continuous casting and any process incidental to such production ;
- (c) the melting and casting of non-ferrous metal (and/or ferrous metal) for the production of ingots, billets, slabs or other similar products and the stripping thereof ; but shall not apply with respect to
  - (i) any process with respect to the smelting and manufacture of lead and the Electric Accumulators ;
  - (ii) any process for the purposes of printing works ; or
  - (iii) any smelting process in which metal is obtained by a reducing operation or any process incidental to such operation ; or
  - (iv) any process in the course of the manufacture of solder or any process incidental to such manufacture; or
  - (v) the melting and casting of lead or any lead-based alloy for the production of ingots, billets, slabs or other similar products or the stripping thereof, or any process incidental to such melting, casting or stripping.

## **2. Definition**

For the purpose of this Schedule

- (i) "approved respirator" means a respirator of a type approved by the Chief Inspector-cum-Facilitator ;
- (ii) " Cupola or furnace" includes a receiver associated there with;
- (iii) "dressing or fettling operations "includes stripping and other removal of adherent sand, corers, runners, risers, flash and other surplus metal from a casting and the production of reasonably clean and smooth surface, but does not include
  - (i) the removal of metal from a casting when performed incidentally in connection with the machining or assembling of castings after they have been dressed or fettled, or
  - (ii) any operation which is a knockout operation within the meaning of this Schedule ;
- (iv) "foundry" means those parts of a factory in which the production of iron or steel or non-ferrous castings (not being the production of pig iron or the production of steel in the form of ingots) is carried on by casting in moulds made of sand, loam, moulding composition or other mixture of materials, or by steel moulding or by centrifugal casting in metal moulds lined with sand, or die casting including pressure die castings, together with any part of the factory in which any of the following processes are carried on as incidental processes in connection with and in the course of, such production, namely, the preparation and mixing of materials used in foundry process, the preparation of moulds and cores, knock-out operations and dressing or fettling operations ;
- (v) "knock-out operations" means all methods of removing castings from moulds and the following operations, when done in connection therewith, namely, stripping, coring out and the removal of runners and risers ;
- (vi) "pouring aisle" means an aisle leading from a main gangway or directly from a cupola or furnace to where metal is poured into moulds.
- (vii) "qualified supervisors" means a person possessing a Bachelor's Degree in Science or Diploma or Degree in Engineering with Certificate in ferrous/non-ferrous technology from any institution recognised by the Chief Inspector-cum-Facilitator.

## **3. Prohibition of use of certain materials as parting materials**

- (1) A material shall not be used as a parting material if it is a material containing compounds of silica calculated as silica to the extent more than five per cent, by weight of the dry material:

Provided that this prohibition shall not prevent the following being used as a parting material if the material does not contain an admixture of any other silica:

- (i) Zirconium silicate (zircon).
  - (ii) Calcined china clay.
  - (iii) Calcined aluminous fireclay.
  - (iv) Sillimanite.
  - (v) Calcined or fused alumina.
  - (vi) Olivine.
  - (vii) Natural sand.
- (2) Dust or other matter deposited from a fettling or blasting process shall not be used as a parting material or as a constituent in a parting material.

## **4. Arrangement and storage**

For the purposes of promoting safety and cleanliness in workrooms, the following requirements shall be observed:

- (a) moulding boxes, loam plates, ladles, patterns, pattern plates, frames, boards, box weights, and other heavy articles shall be so arranged and placed as to enable work to be carried on without unnecessary risk ;
- (b) suitable and conveniently accessible racks, bins or other receptacles shall be provided

- and used for the storage of other gear and tools;
- (c) where there is bulk storage of sand, fuel, metal scrap or other materials or residues, suitable bins, bunkers or other receptacles shall be provided for the purpose of such storage.

## **5. Construction, Installation and Operation**

- (1) The precinct in which induction furnace is installed shall be of adequate strength and shall be segregated from the other parts of the factory in such a way so that minimum number of workers is exposed to the risk of any fire or explosion at any time;
- (2) Furnace shed shall be well ventilated
- (3) All the fitting and attachment of Induction furnace shall be of good construction, sound material and adequate strength;
- (4) Adequate arrangements shall be made to avoid tilting of the ladles while transportation
- (5) Ladle shall not be filled with molten metal more than 3/4th of its volume to avoid spillage of molten metal while being carried by the crane;
- (6) The refractory material of the induction furnace shall be strong at high temperature, resistant to thermal shock, chemically inert, low thermal conductivity and co-efficient of expansion and of adequate uniform thickness.
- (7) The lining of the induction furnace shall be checked by qualified supervisor every week for any wear and tear and damage as per relevant Bureau of Indian Standards.
- (8) Adequate precautions shall be taken during repair of induction furnace as per relevant bureau of Indian Standards.

## **6. Construction of floors**

- (1) Floors or indoor workplaces in which the processes are carried on, other than parts which are of sand, shall have an even surface of hard material.
- (2) No part of the floor of any such indoor workplace shall be of sand except, where this is necessary by reason of the work done.
- (3) All parts of the surface of the floor of any such indoor workplace which are of sand shall, so far as practicable, be maintained in an even and firm condition.

## **7. Means of escape**

There shall be atleast two ways of escape with adequate width at opposite ends of the furnace platforms.

## **8. Display of Notice**

Notice regarding non-use of water, etc. near induction furnace shall be displayed

## **9. Charging of scrap in Induction Furnace**

- (1) No scrap material with close cavities shall be charged in the induction furnace. Scrap to be charged shall be dry and shall not contain oil or any other liquid or moisture.
- (2) No scrap material shall be fed into induction furnace unless it is thoroughly checked in the presence of qualified Supervisor.
- (3) Sealed container or part made by centrifugal casting shall not be fed into the furnace unless it is cut into pieces.
- (4) No worker shall be engaged in charging of scrap material in induction furnace unless practical measures such as substantial safeguards against splash of hot metal, splatter etc., are provided.
- (5) Scrap received in the form of pressed bundle should be opened, sorted and only then fed into furnace.

## **10. Cleanliness of Indoor workplaces**

- (1) All accessible parts of the walls of every indoor workplace in which the processes are carried on and of everything affixed to those wall shall be effectively cleaned by a suitable method to a height of not less than 4.2 meters from the floor atleast once in every period of fourteen months. A record of the carrying out of every such effective cleaning in pursuance of this paragraph including the date (which shall be not less

than five months nor more than nine months after the last immediately preceding washing, cleaning or other treatment).

- (2) Effective cleaning by a suitable method shall be carried out at least once every working day of all accessible parts of the floor of every indoor workplace in which the processes are carried on, other than pans which are of sand; and the parts which are of sand shall be kept in good order.

#### **11. Manual operations Involving molten metal**

- (1) There shall be provided and properly maintained for all persons employed on manual operations involving molten metal with which they are liable to be splashed, a working space for that operation
  - (a) which is adequate for the safe performance of the work and
  - (b) which, so far as reasonably practicable, is kept free from obstruction.
- (2) Any operation involving the carrying by hand of a container holding molten metal shall be performed on a floor all parts of which were any person walks while engaged in the operation shall be on the same level :

Provided that, where necessary to enable the operation to be performed without undue risk, nothing in this paragraph shall prevent the occasional or exceptional use of a working space on a different level from the floor, being a space provided with a safe means of access from the floor for any person while engaged in the operation.

#### **12. Gangways and pouring aisles**

- (1) In every workroom to which this paragraph applies constructed, reconstructed or converted for use as such after the making of this schedule and, so far as reasonably practicable, in every other workroom to which this paragraph applies, sufficient and clearly defined main gangways shall be provided and properly maintained which
  - (a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage ;
  - (b) shall be kept, so far as reasonably practicable, free from obstruction ;
  - (c) if not used for carrying molten metal, shall be at least 920 millimeters in width ;
  - (d) if used for carrying molten metal shall be
    - i. Where truck ladles are used exclusively, at least 600 millimeters wider than the overall width of the ladle;
    - ii. Where hand shanks are carried by not more than two men, at least 920 millimeters in width ;
    - iii. Where hand shanks are carried by more than two men, at least 1.2 meters in width ; and
    - iv. Where used for simultaneous travel in both directions by men carrying hand shanks, at least 1.8 meters in width.
- (2) In workroom to which this paragraph applies constructed, reconstructed or converted for use as such after the making of this Schedule, sufficient and clearly defined pouring aisles shall be provided and properly maintained which
  - (a) shall have an even surface of hard material and shall, in particular, not be of sand or have on them more sand than is necessary to avoid risk of flying metal from accidental spillage;
  - (b) shall be kept so far as reasonably practicable free from obstruction ;
  - (c) if molten metal is carried in hand ladles or bull ladles by not more than two men per ladle, shall be at least 460 millimeters wide, but where any moulds alongside the aisle are more than 510 millimeters above the floor of the aisle, the aisle shall be not less than 600 millimeters wide;
  - (d) if molten metal is carried in hand ladles or bull ladles by more than two men per ladle, shall be at least 760 millimeters wide ;
  - (e) if molten metal is carried in crane, trolley or truck ladles, shall be of a width adequate for the safe performance of the work.
- (3) Requirements of sub-paragraphs (1) and (2) shall not apply to any workroom or

- part of a workroom if, by reason of the nature of the work done therein, the floor of that workroom or, as the case may be, that part of a workroom has to be of sand.
- (4) In this paragraph "workroom to which this paragraph applies" means a part of a ferrous or non-ferrous foundry in which molten metal is transported or used, and a workroom to which this paragraph applies shall be deemed for the purposes of this paragraph to have been constructed, reconstructed or converted for use as such after the making of this schedule if the construction, reconstruction or conversion thereof was begun after the making of this Schedule.

### **13. Work near cupolas and furnaces**

No person shall carry out any work within a distance of four meters from a vertical line passing through the delivery and of any spout of a cupola or furnace, being a spout used for delivering molten metal, or within a distance of 2.4 meters from a vertical line passing through the nearest part of any ladle which is in position at the end of such a spout, except in either case where it is necessary for the proper use or maintenance of a cupola or furnace that work should be carried out within that distance of that work is being carried out at such a time and under such conditions that there is no danger to the person carrying it out from molten metal which is being obtained from the cupola or furnace or is in a ladle in position at the end of the spout.

### **14. Dust and fumes**

- (1) Open coal, coke or wood fires shall not be used for heating or drying ladles inside a workroom unless adequate measures are taken to prevent, so far as practicable, fumes or other impurities from entering into or remaining in the atmosphere of the workroom.
- (2) No open coal, coke or wood fires shall be used for drying moulds except in circumstances in which the use of such fires is un-avoidable.
- (3) Mould stoves, core stoves and annealing furnaces shall be so designed, constructed, maintained and worked as to prevent, so far as practicable, offensive or injurious fumes from entering into any workroom during any period when a person is employed therein
- (4) All knock-out operations shall be carried out
  - (a) In a separate part of the foundry suitably partitioned off, being a room or part in which, so far as reasonably practicable, effective and suitable local exhaust ventilation and a high standard of general ventilation are provided ; or
  - (b) In an area of the foundry in which, so far as reasonably practicable, effective and suitable local exhaust ventilation is provided, or where compliance with this requirement is not reasonably practicable, a high standard of general ventilation is provided.
- (5) All dressing or fettling operations shall be carried out
  - (a) in a separate room or in a separate part of the foundry suitably partitioned off ; or
  - (b) in an area of the foundry set apart for the purpose ; and shall, so far as reasonably practicable, be carried out with effective and suitable local exhaust ventilation or other equally effective means of suppressing dust, operating as near as possible to the point of origin of the dust.

### **15. Maintenance and examination of exhaust plant**

- (1) All ventilating plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be properly maintained.
- (2) All ventilation plant used for the purpose of extracting, suppressing or controlling dust or fumes shall be examined and inspected once every week by a responsible person. This shall be thoroughly examined and tested by a competent person atleast once in every period of twelve months; and particulars of the results of every such examination and test shall be entered in a register in **Form XXXV** which shall be kept readily available for inspection by an Inspector-cum-Facilitator. Any defect found on any such examination and test shall be immediately reported in writing by

the person carrying out the examination and test to the Occupier of the Factory.

## **16. Protective equipment**

- (1) The occupier shall provide and maintain suitable protective equipment specified for the protection of workers,
  - (a) suitable gloves or other protection for the hands for workers engaged in handling any hot material likely to cause damage to the hands by burn, scald or scar, or in handling pig iron, rough castings or other articles likely to cause damage to the hands by cut or abrasion;
  - (b) approved respirators for workers carrying out any operations creating a heavy dust concentration which cannot be dispelled quickly and effectively by the existing ventilation arrangements.
- (2) No respirator provided for the purposes of sub-paragraph (1) (b) has been worn by a person shall be worn by another person if it has not since been thoroughly cleaned and disinfected.
- (3) Persons who for any of their time
  - (a) work at a spout of or attend to, a cupola or furnace in such circumstances that material there from may come into contact with the body, being material at such a temperature that its contact with the body would cause a burn ; or
  - (b) are engaged in, or in assisting with, the pouring of molten metal ; or
  - (c) carry by hand or move by manual power any ladle or mould containing molten metal ; or
  - (d) are engaged in knocking-out operations involving material at such a temperature that its contact with the body would cause a burn; shall be provided with suitable footwear and gaiters which worn by them prevent, so far as reasonably practicable, risk of burns to his feet and ankles.
- (4) Where appropriate, suitable screens shall be provided for protection against flying materials (including splashes of molten metal and sparks and chips thrown off in the course of any process).
- (5) The occupier shall provide and maintain suitable accommodation for the storage and make adequate arrangements for cleaning and maintaining of the protective equipment supplied in pursuance of this paragraph.
- (6) Every person shall make full and proper use of the equipment provided for his protection in pursuance of sub-paragraphs (1) and (4) and shall without delay report to the Occupier, or other appropriate person any defect in, or loss of, the same.
- (7) Workers working in the furnace/casting pit area shall be provided with cotton clothes. Safety shoes, leg guards, apron, face shield, hand gloves and safety helmet.
- (8) Workers employed for segregation of scrap shall be provided with safety shoes and hand gloves.
- (9) Fire retardant and heat retardant clothing shall be provided to all the workers working on platform of induction furnace

## **17. Training and Supervision**

- (1) All operations under this Schedule shall be carried out under the supervision of qualified supervisors at all times.
- (2) Workers carrying out operations and maintenance activities in foundries and furnaces shall be adequately trained

## **18. Washing and bathing facilities**

- (1) There shall be provided and maintained in clean state and good repair for the use of all workers employed in the foundry,
  - (a) a wash place under cover with either
    - (i) a trough with impervious surface fitted with a waste pipe without plug, and of sufficient length to allow atleast sixty centimeters for every 10 such persons employed at any one time and having a constant supply of dean



water from taps or jets above the trough at intervals of not more than sixty centimeters ; or

- (II) atleast one tap or stand pipe for every ten such persons employed at any one time, and having a constant supply of dean water, the tap or stand pipe being spaced not less than 1.2 meters apart ; and
  - (b) not less than one-half of the total number of washing places provided under clause (a) shall be in the form of bathrooms ;
  - (c) a sufficient supply of clean towels made of suitable material changed daily, with sufficient supply of nail brushes and soap.
- (2) The facilities provided for the purposes of sub-paragraph (1) shall be placed in-charge of a responsible person or persons and maintained in a clean and orderly condition.

#### **19. Disposal of dross and skimming**

Dross and skimming's removed from molten metal or taken from a furnace shall be placed forthwith in suitable receptacles.

#### **20. Disposal of waste**

Appropriate measures shall be taken for the disposal of all waste products from shell moulding (including waste burnt sand) as soon as reasonably practicable after the castings have been knocked-out.

#### **21. Material and equipment left out of doors**

All material and equipment left out of doors (including material and equipment so left only temporarily or occasionally) shall be so arranged and placed as to avoid unnecessary risk. There shall be safe means of access to all such material and equipment and, so far reasonably practicable, such access shall be by roadways or pathways or which shall be properly maintained. Such roadways or pathways shall have a firm and even surface and shall, so far as reasonably practicable be kept free from obstruction.

#### **22. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in sub-paragraph (a);
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health Register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **23. Medical Examination by Medical Officer**

- (1) Every worker employed in a foundry shall be examined by a Medical Officer within fifteen days of his first employment. Such medical examination shall include pulmonary function tests and chest X- ray. No worker shall be allowed to work after fifteen days of his first employment in the factory, unless certified fit for such employment by the Medical Officer.
- (2) Every worker employed in the said processes shall be re- examined by a Medical Officer atleast once in every 12 months. Such examination shall, wherever the Medical Officer considers appropriate, include all the tests as specified in sub-paragraph (1) except chest X-ray which will be once in three years.
- (3) The Medical Officer after examining a worker, shall issue a certificate of fitness in **Form XXXIV**. The record of examination and re-examinations carried out shall be entered in the Certificate and the Certificate shall be kept in the custody of the Occupier of the Factory. There cord of each examination carried out under sub-paragraphs (1) and (2) including the nature and the results of the tests, shall also be entered by the Medical Officer in a Health Register in **Form XXXIII**.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector-cum-Facilitator.

- (5) If at any time the Medical Officer is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in those documents should also include the period for which he considers that the said person is unfit for work in the said processes. The person so suspended from the process, shall be provided with alternate placement facilities unless he is fully incapacitated in the opinion of the Medical Officer, in which case the person affected shall be suitably rehabilitated.
- (6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed or permitted to work in the said processes unless the Medical Officer, after further examination, again certifies him fit for employment in those processes

## **SCHEDULE-AT**

**(See rule 96 (2) & (4))**

### **OPERATIONS INVOLVING COMPRESSED AIR WORKING ENVIRONMENT**

#### **1. Application:**

The provisions of this schedule shall apply to all factories or parts of factories wherein workers are employed in compressed air working environment.

#### **2. Definitions:**

- (a) "Working chamber" means a part of the factory where work in a compressed air environment is carried out, but does not include a medical lock.
- (b) "working pressure" means pressure in a working chamber to which a worker is exposed;
- (c) "medical lock" means a double compartment lock used for the therapeutic recompression and de-compression of persons suffering from the ill-effects of decompression;
- (d) "lock attendant" means the person in-charge of the medical lock and who is immediately responsible for controlling the compression, recompression or decompression of persons in such lock;
- (e) "Pressure" means air pressure in bars above the atmospheric pressure.

#### **3. Ventilation:**

The Occupier shall ensure that the amount of fresh air supplied by mechanical means of ventilation in an hour shall be equivalent to atleast six times the cubic capacity of the work chamber and shall be distributed evenly throughout the work chamber without dead air pockets or undue draughts caused by high inlet velocities.

#### **4. Air Supply intake point:-**

The Occupier shall ensure that the air intake points for all air compressors are located at places where such intake air does not get contaminated with dust fumes, vapour and exhaust gases or other contaminants.

#### **5. Emergency generators:** The Occupier shall ensure that,—

- (a) every compressed air system is provided with emergency power supply system for maintaining continued supply of compressed air; and
- (b) the emergency power supply system is maintained and is readily available at all times.

**6. Air mains:**

The Occupier shall ensure that every air main supplying air to the working chamber, medical-lock is protected against accidental damage and where it is not practicable to provide such protection, a stand-by air main is provided.

**7. Quality and quantity of air:** The Occupier shall ensure that.—

- (a) without prejudice to requirement of paragraph 3, every working chamber is maintained with the supply of compressed air at the rate of not less than zero point three cubic metres per minute per person working therein;
- (b) a reserve supply of compressed air is made available at all times for medical lock; and
- (c) the air supplied in a compressed air environment is as far as practicable free from odour and other contaminants, namely, dust, fumes and other toxic substances.

**8. Working temperature:**

The Occupier shall ensure that the temperature in any working chamber does not exceed twenty-nine degree centigrade and that the arrangement is maintained for keeping records in which the temperature measured by dry bulb and wet bulb inside such working chamber once in every hour and to produce such records for inspection on demand to the inspector-cum- facilitator having jurisdiction.

**9. Working in compressed air environment:** The Occupier shall ensure that.—

- (a) de-compression of all workers to atmospheric condition is carried out through qualified and trained lock attendants in accordance with a de-compression procedure approved by the Chief Inspector-cum-facilitator;
- (b) a worker who had undergone three de-compressions from a pressure exceeding one bar in a period of eight hours in a working chamber is not allowed to enter a compressed air environment except for the purpose of carrying out rescue work;
- (c) a worker employed in a compressed air environment for a period of eight hours in a day is not employed again in such environment unless he has spent not less than twelve consecutive hours of rest at atmospheric pressure;
- (d) no worker is engaged in a compressed air environment at a pressure which exceeds three bars unless prior permission in writing has been obtained from the Chief Inspector-cum-facilitator for such engagement;
- (e) no worker is employed in a compressed air environment without providing suitable personal protective equipments;
- (f) no worker is employed in a compressed air environment for more than fourteen consecutive days in a month;
- (g) a register of employment of all workers employed in compressed air environment, is maintained;
- (h) an identification badge is supplied to a worker employed in compressed air environment;
- (i) the badge of a worker referred to in sub-clause (h) contains particulars of his name, location of the medical lock allotted to him for work, the telephone number of the medical practitioner concerned for his treatment and the instructions in case of his illness of unknown and doubtful causes;
- (j) record of all identification badges supplied to workers under sub- clause (h), is kept in a register; and
- (k) every worker whose name appears in the register referred to in sub- clause (j) wears the badge supplied to him under sub-clause (h) at all times during his duty hours.

**10. Safety instructions:**

The Occupier shall ensure that all workers employed in compressed air environment follow the instructions issued for their safety in the course of such employment.

**11. Medical lock:** The Occupier shall ensure that,—

- (a) a suitably constructed medical lock is maintained where workers are employed in a working chamber at a pressure exceeding one bar; and
- (b) where more than one hundred workers are employed in a compressed air working environment exceeding one bar, one medical lock is provided for every one hundred workers or part thereof and such medical lock is situated as near as possible to the work chamber.

**12. Medical facilities and records of examinations and tests:**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in sub-paragraph (a);
- (2) Every worker employed in a compressed air working environment shall be examined by medical practitioner within fifteen days of his first employment. Such medical examination shall include pulmonary function tests and chest X-ray. No worker shall be allowed to work after fifteen days of his first employment in the factory, unless certified fit for such employment by the Medical practitioner.
- (3) Every worker employed in the compressed air working environment shall be re-examined by a Medical practitioner at least once in every 12 months. Such examination shall, wherever the Medical practitioner considers appropriate, include all the tests as specified in sub-paragraph (2) except chest X-ray which will be once in three years.
- (4) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health register in **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

**SCHEDULE-AU**

**(See rule 96 (2) & (4))**

**WELDING, SOLDERING AND BRAZING**

**1. Application**

The Schedule shall apply to every factory in which or in any part of which any Welding, soldering and brazing process is carried on.

**2. Definitions**

For the purpose of this Schedule

- (a) "Welding" means a fabrication process that joins materials, usually metals or thermoplastics, by using high heat to melt the parts together and allowing them to cool, causing fusion
- (b) "Soldering" means a joining process used to join different types of metals together by melting solder.
- (c) "Brazing" means a metal-joining process in which two or more metal items are joined together by melting and flowing a filler metal into the joint, the filler metal having a lower melting point than the adjoining metals.

**3. Efficient exhaust draught**

An efficient exhaust draught shall be provided by mechanical means and shall operate on the dust, fumes or smoke given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the dust, fumes or smoke entering into any room or place in which work is carried on.

**4. Testing and examination of ventilating systems:-**

- (1) All ventilating systems used for the purpose of extracting or suppressing fumes as

required by this schedule shall be as per the relevant standard prescribed by the Bureau of Indian Standards, examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of twelve months. Any defects found by such examinations or test shall be rectified forthwith.

- (2) A register containing particulars of such examination and tests and the state of the plant and the repairs or alterations, if any, found to be necessary shall be kept and shall be available for inspection by an inspector-cum-Facilitator.

#### **5. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health register Form **XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator, which shall include respiratory evaluation

#### **7. Protective clothing and equipment.—**

The Occupier of the factory shall provide and maintain in good and clean condition suitable

- (i) flame resistant gauntlet gloves and shirts with sleeves of sufficient length and construction to protect the arms from heat, UV radiation and sparks.
- (ii) fire- resistant aprons, coveralls and safety shoes.
- (iii) fire-resistant shoulder covers (e.g., capes), head covers(e.g., skull caps), and ear covers for welders performing overhead works.
- (iv) welding helmets with UV filter plates and safety spectacles with side shields or goggles.
- (v) Face shield and Suitable Respirators where ever necessary

#### **8. Electrical Hazards**

- (1) The Occupier of the factory shall provide and maintain -
  - (i) a suitable circuit breaker in the primary circuit;
  - (ii) a suitable disconnecting switch or controller should be located near the welding equipment;
  - (iii) insulated cables with proper power rating;
  - (iv) welding machines with Voltage Reduction Device to prevent any electrical hazard to workers;
  - (v) proper Earthing of equipment and Continuity to be ensured; and
  - (vi) working area insulation.

#### **9. Prevention of ignition**

- (a) Effective steps shall be taken to prevent the accumulation of flammable dust, gas, fume or vapour in the working area.
- (b) Any material of flammable nature shall not be kept near the working area.

#### **10. Effective Screening Arrangements**

Suitable screening arrangement shall be provided to prevent any weld-spatter thrown off near pathways and other work areas.

#### **11. Cautionary placard instructions**

Cautionary notices in the following form and printed in the language of the majority of the workers employed, shall be affixed in prominent places in the factory where they

can be easily and conveniently read by the workers and arrangements shall be made by the occupier to instruct periodically all workers employed in a Welding, Soldering, Brazing process regarding the health hazards connected with their duties and the best preventive measures and methods to protect themselves. The notices shall always be maintained in a legible condition.

### **CAUTIONARY NOTICE**

Welding, Soldering, B

razing produces hazardous fumes and Gases

1. Dust fumes and metal fumes of Welding, Soldering, Brazing are toxic when inhaled or when ingested.
2. Do not consume food or drink near the work place.
3. Do not keep inflammable materials near the working area.
4. Use proper protective clothing and equipments provided.

### **SCHEDULE-AV**

(See rule 96 (2) & (4))

### **MANUFACTURING AND PROCESSING OF TEXTILES**

#### **1. Application**

The requirements of this schedule shall apply to factories engaged in the manufacture or processing of textiles other than jute textiles. The schedule would not apply to factories engaged exclusively in the manufacture of synthetic fibers.

#### **2. Definitions**

For the purposes of this schedule –

- (a) "Textile manufacturing process" means it involves production or conversion of textile fibre through a defined process into a product. This includes ginning, spinning, weaving, knitting, dyeing and other processes incidental thereto.
- (b) "Operation in centrifugal machines" means operations that use centrifugal force for separation, filtration and other related operations therein.
- (c) "Calendar" means a set of heavy rollers mounted on vertical side frames and arranged to pass cloth between them. Calendars may have two to ten rollers, or bowls, some of which can be heated.
- (d) "Embossing calendar" means a calendar with two or more tolls, one of which is engraved for producing figure effects of various kinds on a fabric.
- (e) "card" means a machine consisting of cylinders of various sizes and in certain cases flats covered with card clothing and set in relation to each other so that fibers to staple form maybe separated into individual relationship. The speed of the cylinders and their direction of rotation varies. The finished product is delivered as a sliver. Cards of different types are: the revolving flat card, the roller and clearer card, etc.
- (f) "card clothing" means the material with which the surfaces of the cylinder, duffer, flats, etc., of a card are covered and consists of a thick foundation material made of, either textile fabrics through which are pressed many fine closely spaced specially bent wires, or mounted saw toothed wire.
- (g) "Comber" means a machine for combing fibers of cotton, wool, etc. The essential parts are device for feeding forward a fringe of fibers at regular intervals and an arrangement of combs or pins. Which, at the right time pass through the fringe. All tangled fibers, short fibers, and neps are removed and the long fibers are laid parallel.
- (h) "combined machinery" means a general classification of machinery including combers sliver lab machines, ribbon lab machines and gill boxes, but excluding

cards.

- (i) "Rotary staple cutter" means a machine consisting of one or more rotary blades used for the purpose of cutting textile fibers into staple lengths.
- (j) "Garnett machine " means any of a number of types of machines for opening hard twisted waste of wool, cotton, silk, etc Essentially, such machines consist of a lick-in ; one or more cylinders, each having a complement worker and stripper rolls ; and a fancy roll and doffer. The action of such machines is some-what like that of a wool card, but it is much more severe in that the various rolls are covered with garnet wire instead of clothing.
- (k) "Gill box" means a machine used in the worsted system of manufacturing yarns. Its function is to arrange fibers in parallel order. Essentially, it consists of a pair of feed rolls and a series of followers where the followers move at a faster surface speed and perform a combing action.
- (l) "In-running rolls" means any pair of rolls or drums between which there is a "nip ".
- (m) "Interlocking arrangement " means a device that prevents the setting in motion of a dangerous part of a machine or the machine itself while the guard cover or door provided to safeguard against danger is open or unlocked, and which will also hold the guard cover or door closed and locked while the machine or the dangerous part is in motion.
- (n) "Kier" means a large metal vat, usually a pressure type, in which fabrics may be boiled out, bleached, etc.
- (o) "Ribbon lapper" means a machine or a part of a machine used to prepare laps for feeding a cotton comb; its purpose is to provide a uniform lap in which the fibers have been straightened as much as possible.
- (p) "Silver Lapper" means a machine or a part of a machine in which a number of parallel card covers are drafted slightly, laid side by side in a compact sheet and wound into a cylindrical package.
- (q) "Loom" means a machine for effecting the inter-locking of two series of yarns crossing one another at right angles. The warp yarns are wound on a warp beam and pass through bobbins and reeds. The filling is shot across in a shuttle and settled in place by reeds and slay, and the fabric is wound on a cloth beam.
- (r) "Starch mangle" means a mangle that is used specifically for starching cotton goods. It commonly consists of two large rolls and a shallow open vat with several immersion rolls. The vat contains the starch solution.
- (s) "Water mangle" means a calendar having two or more rolls used for squeezing water from fabrics before drying. Water mangles also may be used in other ways during the finishing of various fabrics
- (t) "Mule" means a type of spinning frame having a head stock and a carriage as its two main sections. The head stock is stationary. The carriage is movable and it carries the spindles which draft, and spin the roving into yarn. The carriage extends over the whole width of the machine and moves slowly towards and away from the head stock during the spinning operation.
- (u) "Nip" is the danger zone between two rolls or frames which by virtue of their positioning and movement create a nipping hazard.
- (v) "Openers and pickers" means a general classification of machinery which includes breaker pickers, intermediate pickers, finisher pickers, single process pickers, multiple process pickers, willow machines card and picker waste cleaners, thread extractors, shredding machines, roving waste openers, shoddy pickers, bale breakers, feeders, vertical openers, lattice cleaners, horizontal cleaners and any similar machinery equipped with either cylinders screen section, calendar section, rolls, or beaters used for the preparation of stock for further processing.
- (w) "Paddler" means a trough for a solution and two or more squeeze rolls between which cloth passes after being passed through a mordant or dye bath.
- (x) "Plaiting machine" means machine used to lay cloth into folds or regular length for convenience or subsequent process or use.

- (y) "Roller printing machine" means a machine consisting of a large central cylinder or pressure bowl, around the lower part of the perimeter of which is placed a series of engraved color rollers (each having a color through), a furnisher roller, doctor blades, and tic. The machine is used for printing fabrics.
- (z) "Continuous bleaching range" means a machine for bleaching of cloth in rope or open-width form with the following arrangement. The cloth after wetting out pass through a squeeze roll into a saturator containing solution of caustic soda and then to an enclosed J-Box. A V-shaped arrangement is attached to the front part of the J-Box for uniform and rapid saturation of the cloth with steam before it is packed down in the J-Box. The cloth, in a single strand rope form passes over a guide roll down the first arm of the 'V' and up the second. Steam is injected into the 'V' at the upper end of the second arm so that the cloth is rapidly saturated with steam at this point. The J-Box capacity is such that cloth will remain hot for a sufficient time to complete the scouring action. It then passes a series of washers with a squeeze roll in-between. The cloth then passes through a second set of saturator, J-Box, and washer, where it is treated with the peroxide solution. By slight modification of the form of the unit, the same process can be applied to open-width cloth.
- (aa) "Mercerizing range" means a 3-bowl mangle, a tentee frame, and a number or boxes for washing and scouring. The whole set up is in a straight line and all parts operate continuously. The combination is used to saturate the cloth with sodium hydroxide, stretch it while saturated, and washing out most of the caustic before releasing tension.
- (bb) "Sanforizing machine" means a machine consisting of a large steam-heated cylinder, and endless, thick, woolen felt blanket which is in close contact with the cylinder for most of its perimeter, and an electrically heated shoe which presses the cloth against the blanket while the latter is in as stretched condition as it curves around feed-in roll, (aa) "Shearing machine" means a machine used for shearing cloth. Cutting action is provided by a number of steel blades spirally mounted on a roller. The roller rotates in close contact with a fixed ledger blade. There may be from one to six such rollers on a machine.
- (cc) "Sinning machine" means a machine which comprises of a heated roller, plate, or an open gas flame. The cloth or yarn is rapidly passed over the roller or the plate or through the open gas flame to remove fun or hairiness by burning.
- (dd) "Slasher" means a machine used for applying a size mixture to warp yarns. Essentially, it consists of a stand for holding section beams, a size box, one or more cylindrical dryers or an enclosed hot air dryer, and a beaming end for winding they are on the loom beams.
- (ee) "Tenter frame" means a mashing for drying cloth under tension. It essentially consists of a pair of endless travelling chains fitted with clips of fin pins and carried on tracks. The cloth is firmly held at the selvages by the two chains which diverge as they move forward so that the cloth is brought to the desired width.
- (ff) "Wrapper" means a machine for preparing and arranging the yarns intended for the warp of a fabric specifically a beam warped.

### **3. General safety requirements**

- (1) Every textile machine shall be provided with individual mechanical or electrical means for starting and stopping such machines. Belt shifter on machines driven by belts and shifting should be provided with a belt shifter lock or an equivalent positive locking device.
- (2) Stopping and starting handles or other controls shall be of such design and so positioned as to prevent the operator's hand or fingers from striking against any moving part or any other part of the machine.
- (3) All belts, pulleys, gears, chains, sprocket wheels, and other dangerous moving parts of machinery which either form part of the machinery or arc used in association with it, shall be securely guarded.



#### **4. Openers and pickers**

- (1) In all opening or picker machinery, beaters and other dangerous parts shall be securely fenced by suitable guards so as to prevent contact with them. Such guards and doors or covers of openings giving access to any dangerous part of the machinery shall be provided with interlocking arrangement;

Provided that in the case of doors or covers of openings giving access to any dangerous part other than heater covers, instead of the interlocking arrangement, such openings may be so fenced by guards which prevent access to any such dangerous part and which is either kept positively locked in position or fixed in such a manner that it cannot be removed without the use of hand tools.

- (2) The feed rolls on all opening and picking machinery shall be covered with a guard designed to prevent the operator from reaching the nip while the machinery is in operation.
- (3) The lap forming roller shall be fitted with a guard or cover which shall prevent access to the nip at the intake of the lap roller and fluted roller as long as, the weighted rack is down. The guard or cover shall be so locked that it cannot be raised until the machine is stopped, and the machine cannot be started until the cover or guard is closed:

Provided that the foregoing provision shall not apply to the machines equipped with automatic lap forming devices:

Provided further that any such machine equipped with an automatic lap forming device shall not be used unless the automatic lap forming device is in efficient working order.

#### **5. Cotton cards**

- (1) All cylinder doors shall be secured by an interlocking arrangement which shall prevent the door being opened until the cylinder has ceased to revolve and shall render it impossible to restart the machine until the door has been closed. Provided that the latter requirement in respect of the automatic locking device shall not apply while stripping or grinding operations are carried out:

Provided further that stripping or grinding operations shall be carried out only by specially trained adult workers wearing tight fitting clothing.

- (2) The lick-in shall be guarded so as to prevent access to the dangerous parts.
- (3) Every card shall be equipped with an arrangement that would enable the card cylinder to be driven by power during stripping/grinding operations without having to either shift the main belt to the fast pulleys of the machine or to dismantle the interlocking mechanism. Such an arrangement shall be used only for stripping or grinding operations.

#### **6. Garnett machines**

- (1) Garnett lick-in shall be enclosed.
- (2) Garnett fancy rolls shall be enclosed by guards. These shall be installed in a way that keep worker relic reasonably accessible for removal or adjustment.
- (3) The underside of the garnets shall be guarded by a screen mesh or other form of enclosures to prevent access.

#### **7. Gill boxes**

- (1) The feed end shall be guarded so as to prevent fingers being caught in the pins of the intersecting fallers.
- (2) All nips of in-running rolls shall be guarded by suitable nip guards conforming to the following specifications:

Any opening which the guard may permit when fitted in position shall be so restricted with respect to the distance of the opening from any nip point through that opening and in any circumstances, the maximum width of the opening shall not exceed the following:

Distance of opening from nip point	Maximum width from of opening
0 to 38 mm	6 mm
39 to 63 mm	10 mm
64 to 88 mm	13 mm
89 to 140 mm	15 mm
141 to 165 mm	19 mm
166 to 190 mm	22 mm
191 to 219 mm	32 mm

### **8. Silver and ribbon tappers (cotton)**

The calendar drums and the lap spool shall be provided with a guard to prevent access to the nip between the in-running rolls.

### **9. Speed frames**

Jack box wheels at the head stock shall be guarded and the guard shall have interlocking arrangement.

### **10. Spinning mules**

Wheels on spinning mule carriages shall be provided with substantial wheel guards, extending to within 6mm of the rails.

### **11. Warpers**

Swiveled double-bar gates shall be installed on all warpers operating in excess of 410 meters/min. These gates shall have interlocking arrangement, except for the purpose of inching or jogging: Provided that the top and bottom bar of the gate shall be at least 1.05 and 0.53 meters high from the floor or working platform, and the gate shall be located 38mm from the vertical tangential to the beam head.

### **12. Slashers**

- (1) Cylinder Dryers.
  - (a) All open nips of in-running rolls shall be guarded by nip guards conforming to the requirements in paragraph 2.
  - (b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm. above the floor to control the operation from any point.
  - (c) Slashers operated by push button control shall have stop and start buttons located at each end of the machine and additional buttons located on both sides of the machine at the size box and the delivery end. If calendar rolls are used, additional buttons shall be provided at both sides of the machine at points near the nips, except when slashers are equipped with an enclosed dryer as in paragraph (b)
- (2) Enclosed hot air dryer
  - (a) All open nips of the top squeezing rollers shall be guarded by nip guards conforming to the requirements in paragraph 7 (2).
  - (b) When slashers are operated by control levers, these levers shall be connected to a horizontal bar or treadle located not more than 170 cm. above the floor to control the operation from any point.
  - (c) Slashers operated by push button control shall have stop and start buttons located at each end of the machine and additional stop and start buttons located on both sides of the machine at intervals spaced not more than 1.83 meters on centers.

### **13. Looms**

- (1) Each loom shall be equipped with suitable guards designed to minimize the danger from flying shuttles.
- (2) Beam weights for tension in beam shall be of such construction so as to prevent it falling during its adjustment.

#### **14. Valves of kiers, tanks and other containers**

- (1) Each valve controlling the flow of steam, injurious gases or liquids into a kier or any other tank or container into which a person is likely to enter in connection with a process, operation, maintenance or for any other purpose, shall be provided with a suitable locking arrangement to enable the said person to lock the valve securely in the closed position and retain the key with him before entering the kier, tank or container.
- (2) Wherever boiling tanks, caustic tanks and any other containers from which liquids which are hot; corrosive or toxic may overflow or splash, are so located that the operator cannot see the contents from the floor or working area emergency shut off valves which can be controlled from a point not subject to danger or splash shall be provided to prevent danger.

#### **15. Shearing machines**

All revolving blade on shearing machine shall be guarded so that the opening between the cloth surface and the bottom of the guard will not exceed 10 mm.

#### **16. Continuous bleaching range (Cotton and rayon's)**

The nip of all in-running rolls on open-width bleaching machine rolls shall be protected with a guard to prevent the worker from being caught at the nip. The guard shall extend across the entire length of the nip.

#### **17. Mercerizing range (piece goods)**

- (1) A stopping device shall be provided at each end of the machine.
- (2) A guard shall be provided at each end of the frame between the in-running chain and the dip opener.
- (3) A nip guard shall be provided for the in-running rolls of the mangle and washers and the guard shall conform to the requirements in paragraph 7 (2).

#### **18. Tenter frame**

- (1) A stopping device shall be provided at each end of the machine.
- (2) A guard shall be provided at each end of the machine frame at the in-running chain and the clip opener.

#### **19. Paddels**

Suitable nip guard conforming to the requirement in paragraph 7 (2) shall be provided to all dangerous in-running rolls.

#### **20. Centrifugal extractors**

- (1) Each extractor shall be provided with a guard for the basket and the guard shall have inter-locking arrangement.
- (2) Each extractor shall be equipped with a mechanically or electrically operated brake to quickly stop the basket when the power driving the basket is shut off.

#### **21. Squeezer or wringer extractor water mangle, starch mangle, backwasher (worsted yarn crabbing machines, and decading machines)**

All in-running rolls shall be guarded with nip guards conforming to the requirements in paragraph 7 (2).

#### **22. Sanforizing and palmer machines**

- (1) Nip guards shall be provided on all accessible in-running rolls and these shall conform to the requirements in paragraph 7 (2).
- (2) Access from the sides to the nips of in-running rolls should be fenced by suitable side guards.
- (3) A safety trip rod cable or wire centre cord shall be provided across the front and back of all palmer cylinders extending the length of the face of the cylinder. It shall operate readily whether pushed or pulled. The safety trip shall not be more than 170 cm above the level at which (sic) the foot splashing the operator, the floor or working surface.

### **23. Rope washers**

- (1) Splash guards shall be installed on all rope washers unless the machine is so designed as to prevent the water or liquid from splashing the operator, the floor, or working surface.
- (2) A safety rip rod, cable or wire centre cord shall be provided across the front and the back of all rope washers extending the length of the face of the washer. It shall operate readily whether pushed or pulled. This safety trip shall be not more than 170 cm. above the level on which the operator stands and shall be readily accessible.

### **24. Laundry washer, tumbler or shaker**

- (1) Each drying tumbler, each double cylinder shaker or clothes tumbler, and each washing machine shall be equipped with an inter-locking arrangement which will prevent the power operation of the inside cylinder when the outer door on the case or shell is open, and which will also prevent the outer door on the case or shell from being opened, without shutting off the power and the cylinder coming to a stop. This should not prevent the movement of the inner cylinder by means of a hand operated mechanism or an inching device.
- (2) Each closed barrel shall also be equipped with adequate means for holding open the doors or covers of the inner and outer cylinders or shells while it is being loaded or unloaded.

### **25. Printing machine (Roller type)**

- (1) All in-running rolls shall be guarded by nip guards conforming to the requirement in paragraph 7 (2).
- (2) The engraved roller gears and the large crown wheel shall be guarded.

### **26. Calendars**

The nip at the in-running side of the rolls shall be provided with a guard extending across the entire length of the nip and arranged to prevent the fingers of the workers from being pulled in between the rolls or between the guard and the rolls, and so constructed that the cloth can be fed into the rolls safely.

### **27. Rotary staple cutters**

The cutter shall be protected by a guard to prevent hands reaching the cutting zone.

### **28. Plating machines**

Access to the trip between the knife and card bar shall be prevented by a guard.

### **29. Hand baling machine**

An angle iron handle-stop guard shall be installed at right angle to the frame of the machine. The stop guard shall be so designed and so located that it will prevent the handle from travelling beyond the vertical position should the handle slip from the operator's hand when the pawl has been released from the teeth of the take up gear.

### **30. Flat work ironer**

Each flat-work or collar ironer shall be equipped with a safety bar or other guard across the entire front of the seed or first pressure rolls, so arranged that the striking of the bar or guard by the hand of the operator or other person will stop the machine. The guard shall be such that the operator or other person cannot reach into the rolls without removing the guard. This may be either a vertical guard on all sides or a complete cover. If a vertical guard is used, the distance from the floor or working platform to the top of guard shall be not less than 1.83 meters.

### **31. General safety requirements in a centrifugal machine:**

- (1) Centrifugal machine shall be provided with sufficient inter-locking devices that will

physically prevent the lids from being opened whilst the rotating drums or baskets are in motion under power or due to power derived earlier and by then switched off and also prevent the starting of the drums or baskets under power while the lids are open.

- (2) The above requirements shall not apply while charging, ploughing and discharging operations are carried out when the drums or the baskets are rotated at lower speed.
- (3) Centrifugal machines shall not be operated at a speed in excess of the manufacturer's rating which shall be legibly stamped by the manufacturers both on the inside of the basket and on the outside of the machine casing at easily visible places.
- (4) All centrifugal machines shall be provided with effective breaking arrangements for bringing the cage, drum or basket to rest within a reasonable short period of time after the power to drive the motor is cut off.
- (5) The cages, drums or baskets shall be thoroughly examined by a competent person once in every twelve months to check their balance and in case balance at high speed is not observed, effective steps shall be taken to restore their balance before re-commissioning the machines.]

### **32. Precautions against ignition**

Wherever there is danger of fire or explosion from accumulation of flammable or explosive dust, fumes or vapours in air:-

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
- (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited ;
- (e) transmission belts with iron fasteners shall not be used; and
- (f) all other precautions as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks overheated surfaces of machinery or plant, chemical or physical chemical reaction and radiant heat.

**33. Spontaneous ignition** - Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation. The material susceptible to spontaneous ignition should be stored in dry condition and should be in heaps of such capacity and separated by such passage which will prevent fire. The materials susceptible to ignition and stored in the open shall be at a distance not less than 10 meters away from process or storage buildings.

### **34. Fire fighting system**

- (1) In every factory to which this schedule applies fire fighting arrangement shall be made wherein:
  - (i) the fire hydrant system shall be capable of supplying a minimum of 4,500 liters per minute at a pressure of not less than 7 kilograms per square cm.
  - (ii) adequate provision of water supply for firefighting shall be made with static storage capacity of not less than 2 hours aggregate pumping.
- (2) Every factory employing five hundred or more persons shall provide
  - (a) Trained and responsible fire fighting squad so as to effectively handle the fire-fighting and life saving equipment in the event of fire or other emergency.

Number of persons in this squad will necessarily depend upon the size of risk involved, but in no case shall be less than eight such trained persons to be available at any time. The squad shall consist of watch and ward personnel, fire pump man and departmental supervisors and operators trained in the operation of fire and emergency services.

- (b) Squad leaders shall preferably be trained in a recognised Government institution and their usefulness enhanced by providing residence on the premises.
- (c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.
- (d) A muster roll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each leader as well as displayed in prominent places so as to be easily available for reference in case of emergency.
- (e) The pump man shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all firefighting equipment in proper working order. Any defect coming to his notice shall be immediately brought to the notice of squad leader.
- (f) As far as is practicable, the fire pump room and the main gate(s) of the factory be connected to all manufacturing or storing areas through telephone interlinked and placed in a convenient location near such areas.

### **35. Personnel Protective Equipment.-**

The occupier shall provide suitable personnel protective equipments such as respirators, hand gloves, shoes, helmets, goggles, earplug, aprons, etc, as per the relevant standard prescribed by the Bureau of Indian Standards or in absence of it, relevant international standards, to the workers.

### **36. Exhaust draught**

- (1) An efficient exhaust draught shall be provided by mechanical means and shall operate on the dust given off in the process as near as may be at the point of origin. The exhaust draught appliance shall be so constructed, arranged and maintained as to prevent the dust entering into any room or place in which work is carried on.
- (2) All equipment for the extraction or suppression of dust shall atleast once in every six months be examined and tested by a competent person, and any defect disclosed by such examination and test shall be rectified as soon as practicable. A register containing particulars of such examination and test shall be kept in **Form XXXV**.

### **37. Precautions against dangerous fumes, gases, etc.-**

- (1) No person shall be required or allowed to enter any chamber, tank, vat, pit, pipe, flue or other confined space in any factory in which any gas, fume, vapour or dust is likely to be present to such an extent as to involve risk to persons being overcome thereby, unless it is provided with a manhole of adequate size or other effective means of egress.
- (2) No person shall be required or allowed to enter any confined space as is referred to in sub-paragraph (1), until all practicable measures have been taken to remove any gas, fume, vapour or dust, which may be present so as to bring its level within the permissible limits and to prevent any ingress of such gas, fume, vapour or dust and unless-
  - (c) a certificate in writing has been given by a competent person, based on a test carried out by himself that the space is reasonably free from dangerous gas, fume, vapour or dust; or
  - (d) such person is wearing suitable breathing apparatus and a belt securely attached to a rope the free end of which is held by a person outside the confined space.

### **38. Medical facilities and records of examinations and tests:**

1. (a) The occupier of every factory to which the schedule applies, shall employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator ; and  
(b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests, which shall include respiratory and hearing evaluation carried out by the said medical practitioner shall be maintained in Health register **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (3) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Medical practitioner within 15 days of his first employment and re-examined atleast once in every 12 calendar month

### **SCHEDULE-AW**

**(See rule 96 (2) & (4))**

### **PROCESSING OF RUBBER AND PLASTIC COMPOUNDS**

#### **1. Application**

The requirements of this schedule shall apply to factory or part thereof wherein manufacture or processing of rubber and plastic compounds is carried on.

#### **2. Definitions:—**For the purpose of this Schedule,—

- (a) “Processing of Rubber and plastic compounds” means breaking down, cracking, washing, grating, mixing, refining, moulding, extruding, handling, vulcanizing and warming rubber or plastic compounds;
- (b) “calendar” shall mean machine with rolls used for frictioning, sheeting coating and spreading of rubber compounds and plastic or plastic compounds;
- (c) “Injection moulding machine” shall mean a moulding machine wherein a heat-softened rubber or plastic material is forced from a cylinder into a relatively cool cavity, which gives the article the desired shape.

**3. Installation of machines.-** Rubber and Plastic Mills shall be so installed that top of the front roll is not less than one metre above the floor or working level, provided that in existing installations where the top of the front roll is below this height, a strong rigid distance bar guard shall be fitted across the front of the machine in such position that the operator cannot reach the nip of the roller from the normal working position of the operator.

#### **4. Safety Devices.-**

- (1) (a) Rubber and Plastic Mills shall be equipped with hoppers so constructed or guarded that it is impossible for the operators to come into contact in any manner with the nip of the rolls or horizontal safety-trip rods or tight wire cable across both front and rear, which will when pushed or pulled operate instantly to disconnect the power and apply the brakes or to reverse the rolls.  
(b) Safety- trip rods or tight wire cable on rubber Mills shall extend across the entire length of the face of the rolls and shall be located not more than 170 centimeters above the floor or working level.
- (2) (a) Calendar machines shall be equipped with horizontal safety-trip rods or tight wire across both front and rear, which will when pushed or pulled, operate instantly to disconnect the power and apply the brakes or to reverse the roll;

- (b) safety-trip rods or tight wire cables on calendar machines shall extend across the entire length of the face of the rolls and shall be located not more than 170 centimeters above the floor or working level.
- (c) On each side of all calendars and near both ends of the face of the rolls there shall be a vertical tight wire cable connecting with the bar tripping mechanism at the top and fastened to the frame within 30 centimeters of the floor. These cables should be positioned at a distance of not more than 30 centimeters from the face of the roll and at a distance of not less than 25 millimeters from the calendar frame.

**5. Maintenance and Safety Devices:**—Safety-trip rods and tight wire cables on all rubber mills and calendars shall be examined and tested daily in the presence of the occupier or other qualified person and if any defect is disclosed by such examination and test, the mill or calendars shall not be used until such defect has been remedied. Record of such examination and testing shall be maintained.

**6. Injection Moulding Machine and Extruders:—**

- (1) A Suitable interlock arrangement shall be provided and maintained so that moulds cannot be closed unless the front safety gate is fully closed and on opening the front safety gate, the movement of moulds will stop automatically. No access shall be available to the moulds through the safety gate.
- (2) In addition to the above, a hydraulic safety arrangement shall also be incorporated with the front safety gate. This shall prevent the tail stock mould plate from moving forward on opening of the front safety gate.
- (3) At the rear of the machine there shall be provided either an efficient fixed guard or a sliding gate which shall be suitably inter-locked with the movement of the mould plates in the manner of the front safety gate as required under (1) above so as to prevent access to the danger zone of the moulds in motion from the rear.
- (4) The injection unit and all other accessible parts shall be adequately insulated or guarded and warning signs shall be displayed where hot parts are necessarily exposed.
- (5) The electrical safety of the machine shall be ensured through proper insulation of heating elements and provision of ground fault current breaker systems.

**7. Ventilation**

- (1) Adequate ventilation arrangements shall be provided and maintained at all times in the process area referred in paragraph (1) where dangerous or toxic or flammable or explosive dust, fumes and vapours could be present. These arrangements shall ensure that concentrations, which are either harmful or could result in fire or explosion, are not permitted to be built up in the work environment.
- (2) By suitable means, ventilation arrangements shall provide adequate supply of fresh air along with the maintenance of workplace temperature without detrimental to the health of the workers employed therein.

**8. Safety Precautions.-**

- (1) Written safe system of work shall be developed and followed for safety of all workers working on the machine, mould changing and maintenance work and all such workers shall be adequately trained and instructed in the safe method of work before being employed.
- (2) No process or work shall be carried on in such a manner as to cause risk of bodily injury to the persons employed.

**9. Personal protective equipments:**



- (1) Workers shall be provided with suitable personal protective equipment to prevent burns from contact with hot surfaces or splatters of hot plastic and gases.
- (2) An approved breathing apparatus and protective clothing shall be provided and maintained in good condition for use of every person employed in process area.

#### **10. Medical facilities and records of examination and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator;
  - (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a);
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in Health register **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (3) Every worker employed in any of the processes to which this Schedule applies shall be examined by a Medical practitioner within 15 days of his first employment. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the Medical practitioner.
- (4) Every worker employed in the said processes shall be re-examined by a Medical practitioner atleast once in every 12 calendar months

### **SCHEDULE-AX**

**(See rule 96 (2) & (4))**

#### **FORGING, FORMING, HEAT TREATMENT AND INCIDENTAL PROCESSES**

##### **1. Application**

The schedule shall apply to all types of operations involved in Forging, Forming, Heat Treatment and other incidental processes.

##### **2. Definition**

For the purpose of this Schedule,

- (a) "approved" means approved by the Chief Inspector-cum-facilitator;
- (b) "Forming" includes all kinds of manufacturing processes involving the application of force by power press, rollers etc.,
- (c) "Heat treatment" includes annealing, normalizing, hardening, tempering, marquenching, ausforming, carburizing, nitriding etc.,
- (d) "fixed fencing" means fencing provided for the tools of a power press being fencing which has no moving part associated with or dependent upon the mechanism of a power press and includes that part of a closed tool which acts as a guard;
- (e) "power press" means a machine used for moulding, pressing, blanking, raising, drawing and similar purposes;

##### **3. Starting and stopping mechanism**

- (1) The starting and stopping mechanism shall be provided with a safety stop so as to prevent over running of the press.
- (2) Suitable arrangements shall be made to arrest the movement of ram during power failure, changing of dies, tool setting and other maintenance work etc.

##### **4. Safety provisions on power press**

- (1) Each power press shall be provided with suitable fixed fencing on all sides so as to

safeguard the workers engaged nearby.

- (2) The design, construction and mutual position of the safeguards referred to in sub paragraph (1) shall be such as to preclude the possibility of the workers hand or fingers reaching the danger zone.
- (3) The machine shall be fed through suitable means so as to ensure the safety of the workers.
- (4) Notwithstanding anything contained in sub-paragraph (1) an automatic or an inter-locked guard with photo-electric sensors, proximity sensors etc, may be used in place of a fixed guard, but where such guards are used they shall be maintained in an efficient working condition and if any guard develops a defect, the power press shall not be operated unless the defect of the guard is removed.

#### **5. Appointment of persons to prepare power presses for use**

- (1) Except as provided in paragraph 6, no person shall set, re-set, adjust or try out the tools on a power press or install or adjust any safety device thereon, being installation or adjustment preparatory to production of (to proving, or carry out an inspection and test of any safety device thereon required by paragraph 8 unless he –
  - (a) has attained the age eighteen;
  - (b) has been trained in accordance with the sub-paragraph (2) ; and
  - (c) has been appointed by the Occupier of the Factory to carry out those duties in respect of the class or description of power press or the class or description of safety device to which the power press or the safety device (as the case may be) belongs;
- (3) The training shall include suitable and sufficient practical instruction in the matters in relation to each type of power press and safety device in respect of which it is proposed to appoint the person being trained.

#### **6. Examination and testing of power-presses and safety devices**

- (1) No power press or safety device shall be taken into use in any Factory for the first time in that factory or in case of a safety device for the first time on any power press, unless it has been thoroughly examined and tested, in the case of a power press, after installation in the factory, or in the case of a safety device, when in position on the power press in connection with which it is to be used.
- (2) No power press shall be used unless it has been thoroughly examined and tested by a competent person, within the immediately preceding period of twelve months.
- (3) No power press shall be used unless every safety device (other than fixed fencing) thereon has within the immediately preceding six months when in position on that power press been thoroughly examined and tested by a competent person.
- (4) The competent person carrying out an examination and test under the foregoing provisions shall make a report of the examination and test containing the following particulars and every such report shall be kept readily available for inspection, namely:
  - (a) name of the occupier of the Factory;
  - (b) address of the Factory;
  - (c) identification number or mark sufficient to identify the power press or the safety device;
  - (d) date on which the power press or the safe device was first taken into use in the Factory;
  - (e) the date of each periodical thorough examination carried out as per requirements of sub-paragraph (2) above;
  - (f) particulars of any defects affecting the safe working of the power press or the safety device found at any such thorough examination and steps taken to remedy such defects.

#### **7. Defects disclosed during a thorough examination and tests**

- (1) Where any defect is disclosed in any power press or in any safety device by any

examination and test under paragraph 6 and in the opinion of the competent person carrying out the examination and test, either

- (a) the said defect is a cause of danger to worker and in consequence the power press or safety device (as the case may be) ought not to be used until the said defect has been remedied ; or
  - (b) the said defect may become a cause of danger to workers and in consequence the power press or the safety device (as the case may be) ought not to be used after the expiration of a specified period unless the said defect has been remedied ; such defect shall, as soon as possible after the completion of the examination and test, be notified in writing by the competent person to the occupier of the Factory and, in the case of a defect falling within clause (b) of this paragraph such notification shall include the period within which, in the opinion of the competent person, the defect ought to be remedied.
- (2) In every case where notification has been given under this paragraph, a copy of the report made under sub-paragraph (4) of paragraph 6 shall be sent by the competent person to the Inspector-cum-facilitator for the area within fourteen days of the completion of the examination and test.
  - (3) Where any such defect is notified to the Occupier in accordance with the foregoing provisions of this paragraph the power press or safety device (as the case may be) having the said defect shall not be used
    - (a) In the case of a defect falling within clause (a) of sub-paragraph (1) until the said defect has been remedied; and
    - (b) In the case of defect falling within clause (b) of sub-paragraph (1), after the expiration of the said defect has been remedied.
  - (4) As soon as is practicable after any defect of which notification has been given under sub-paragraph (1) has been remedied, a record shall be made by or on behalf of the occupier stating the measures by which and the date on which the defect was remedied.

## **8. Inspection and test of safety devices**

- (1) No power press shall be used after the setting, resetting or adjustment of the tools thereon unless a person appointed or authorised for the purpose under paragraph 5 has inspected and tested every safety device thereon which is in position on the said power press;  
Provided that an inspection, test and certificate as aforesaid shall not be required where any adjustment of the tools has not caused or resulted in any alteration to or disturbance of any safety device on the power press and if, after the adjustment of the tools, the safety devices remain, in the opinion of such a person as aforesaid, in efficient working order.
- (2) Every power press and every safety device thereon while it is in position on the said power press shall be inspected and tested by a trained person every day.

## **9. Defects disclosed during an inspection and test**

- (1) Where it appears to any person as a result of any inspection and test carried out by him under paragraph 8 that any necessary safety device is not in position or is not properly in position on a power press or that any safety device which is in position on a power press is not in his opinion suitable, he shall notify the occupier forthwith.
- (2) Except as provided in sub-paragraph (3) of this paragraph where any defect is disclosed in a safety device by any inspection and test under paragraph 8, the person carrying out the inspection and test shall notify the Occupier forthwith.
- (3) Where any defect in a safety device is the subject of a notification in writing under paragraph 7 by virtue of which the use of the safety device may be continued during a specified period without the said defect having been remedied, the requirement in sub-paragraph (2) of this paragraph shall not apply to the said defect until the said period has expired.

**10. Identification of power presses and safety devices**

For the purpose of identification every power press and every safety device provided for the same shall be distinctively and plainly marked.

**11. Safety precautions in forging and rolling operations:**

- (1) Workers shall be provided with suitable personal protective equipment to prevent burns from contact with hot surfaces or splatters of hot material.
- (2) Material handling equipments involved in forging and rolling operations shall be of adequate strength, size and suitable shape.
- (3) Substantial safeguards shall be provided to ensure the safety of the persons employed in forging and rolling operations from the flying scales, splatter and other materials.
- (4) No process or work shall be carried on in such a manner as to cause risk of bodily injury to the persons employed.

**12. Precautions against ignition**

Wherever there is danger of fire from accumulation of flammable or explosive dust, fumes or vapours or any combustible materials in air:-

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent; and
- (c) all other precautions as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks, overheated surfaces etc.,
- (d) safe level of quenching medium shall be ensured in the heat treatment furnaces.
- (e) alternate power supply arrangements shall be made and interlocked with the normal power supply system so as to ensure constant supply of power during quenching operations.

**13. Training and Instructions to operators**

The operators shall be trained and instructed in the safe method of work before starting work on any power press.

**14. Ventilation**

Efficient ventilation shall be provided by mechanical means and shall operate on the dust, fumes or smoke given off in the process as near as may be at the point of origin. The ventilation system shall be so constructed, arranged and maintained as to prevent the dust, fumes or smoke entering into any room or place in which work is carried on.

**15. Testing and examination of ventilating systems:-**

- (1) All ventilating systems used for the purpose of extracting or suppressing fumes as required by this schedule shall be as per the relevant standard prescribed by the Bureau of Indian Standards. It shall be thoroughly examined and tested by a competent person once in every period of twelve months. Any defects found by such examinations or test shall be rectified forthwith.
- (2) A register containing particulars of such examination and tests and the state of the plant and the repairs or alterations, if any, found to be necessary shall be kept and shall be available for inspection by an Inspector-cum-Facilitator.

**16. Medical facilities and records of examinations and tests**

- (1) The occupier of every factory to which the schedule applies, shall
  - (a) employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and
  - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).

- (2) The record of medical examinations and appropriate tests which shall include respiratory and hearing evaluation carried out by the said medical practitioner shall be maintained in Health register **Form XXXIII**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.

#### **SCHEDULE-AY**

**(See rule 96 (2) & (4))**

#### **MANUFACTURING OF PAPER, PAPER BOARDS AND ALLIED PRODUCTS**

##### **1. Application**

The requirements of the Schedule shall apply to factories and parts thereof engaged in manufacturing of paper, paper board, allied products and also to the corresponding operations involved in pulp production.

##### **2. Definitions**

For the purpose of this schedule:

- (a) "approach safety stop" means a safety device which automatically removes a hazardous function when part of a body comes within dangerous proximity of the danger zone;
- (b) "broke" means paper or paper board wasted out during processing
- (c) " broke Guillotine " means a machine with a straight knife for cutting up broke or paper reels ;
- (d) "Calendar "means a machine for glazing paper or paper board:
- (e) "Calendar work platform" means a lifting platform at a Calendar;
- (f) "Constant Pressure Switch" means a start and stop switch automatically returning to the stop position when not actuated:
- (g) "Crosscutting knife" means a knife mounted on a cylinder roll cross cutting the web;
- (h) "drum reel up" means a machine (pope reel) for reeling up the web on an empty spool, friction-driven
- (i) "nip point " means roll nip or any other place where face converge or run so close together that part of the body is in danger of being caught and injured;
- (j) "pulper " means a machine for making fiber suspension by mechanical treatment of pulp or paper broke;
- (k) "reeling Drum or Spool" means a roll for reeling up the web in full machine width at the drum reel-up;
- (l) "threading" means (ceding a narrower pointed web (tail end) through a machine;
- (m) "web" means pulp paper or paper-board in the shape of a continuous carpet during manufacturing or processing.
- (n) "allied products" means all kinds of materials involving paper.

##### **3. Safety Measures against Nip Hazards**

- (1) **General:** Nip points shall, when possible be inaccessible from floor level or from any other surface that can easily be stepped on. If this requirement cannot be satisfied the risk must be avoided in some other way, like air jet/chute, carrier ropes, carrier belt or felt. The platforms should have the board of atleast 100 millimeters high and two handrails at a height of 400 millimeters and at 900 millimeters. The vertical members of the platform should be spaced at 1 meter for cross platform and 2 meters for longitudinal platform.
- (2) **Threading:** Threading shall be done without manual interference when feasible. If threading must be done manually measures must be taken to achieve adequate safety as in paragraph (1) above.

##### **4. Reeling Drum Exchange**

Feeding during spool exchange at the drum reel up shall be effected only by using air jet or air hose, if the speed of the paper machine exceeds 100 meters per minute. If the

speed of the machine is less than 100 meters per minute the feeding may be done manually, but measures must be taken to safety during the operation.

#### **5. Safety measures against risks of being squeezed or knocked down**

The movement of machine pan or other technical device must not expose anybody to the risk of being squeezed, knocked down or injured. If it cannot be ensured that the danger zone is in accession when a risk is present, the moving device must be equipped with an approach safety stop. Its movement controlled by a hand-operated constant pressure switch or the risk avoided.

#### **6. Web Reeling**

- (1) Web reeling shall be arranged so that the reel cannot cause injury by moving without control from its intended position by providing a cradle or a protection barrier.
- (2) When a reel is carried by a through shaft, a device must if necessary, be arranged to keep the shaft ends in their intended position.
- (3) When a reel is carried and substantially governed by resting on two rolls, an ejection shield must be arranged to stop any reel, ejection when the web speed exceeds 15 meters per minute. If the shield is movable, a web speed exceeding 15 meters per minute must not be attainable unless the shield is in its protective position. The shield must not be removable from that position if the web speed exceeds the above value.

#### **7. Handling of reels**

- (1) A reel must not be automatically put in free motion on a floor level or surface that can easily be stepped on unless this can be done with adequate safety.
- (2) A reel discharger shall be arranged and handled so that no-body can be injured by its function or by the discharge reel.
- (3) The discharger must not come into operation unless measures are taken to receive the discharger reel safely, if necessary, the discharger shall be controlled by a hand operated constant pressure switch from a place where the operator can supervise both the zone of movement of the discharger and the course of the discharged reel.
- (4) A reel lifted by the ends of a through shaft must not rotate unless the shaft ends and the lifting equipment can stand the stress caused by the rotation.

#### **8. Cutting of paper**

- (1) A power-driven sharp edged tool for cutting paper shall be shielded against inadvertent contact and as far as possible, inaccessible while in operation.
- (2) A crosscutting knife shall be shielded so that the tool is inaccessible when in operation. It must not be possible to start the tool unless the shield is in its protective position and it must not be possible to open the shield unless the tool is inoperative and its energy supply has been cut off by a safety switch which can be locked in its off-position.

#### **9. Pulpers, pulp chests. Etc**

- (1) The opening of a pulper, a pulp chest another reservoir of a feeding service shall be arranged so that nobody is in danger of falling or stepping down through the opening.
- (2) A pulper and its feeding device shall have a joint emergency stop and if possible a joint energy cut-off device, lockable in the off position.
- (3) Broke holes should not be allowed to become covered by paper or broke which may hide them from operating personnel.

#### **10. Certain devices moving vertically**

- (1) Calendar work platforms, pallet table, rider rolls, ejection shields, reel lowering devices, lids or driving section covers broke guillotine knives or other stationery devices, which for functional reasons are regularly maneuvered to considerably different heights shall be constructed, handled and maintained in such a way that they do not cause any risk of injury by falling down or in any other way and must not be liable to fall down as a result of interruption or variation in the energy supply.
- (2) An operating movement that can cause risk of injury shall be controlled by a constant pressure switch from a place where the operator can supervise the zone of

movement.

- (3) A device as referred to in paragraph (I) above carried by a wire rope or chain shall have the requisite derailment protection and a breaker to stop the movement if the wire rope or chain should slacken or burst.
- (4) If operationally stopped in a position where it could cause a risk of injury by falling down, the device shall be automatically secured.
- (5) The hoisting equipment of a device as referred to in paragraph (1) above shall be readily available for full inspection.

#### **11. Calendar Work Platform**

- (1) Calendar work platform shall be longer than the width of the calendar roll and provided with a gate or opening bar. The gate may only be openable inward or the bar may only be openable upwards and it must not be capable of staying open. The bar shall contain at least two rails.
- (2) A calendar super work platform shall be controlled by a constant pressure switch, located on the platform.
- (3) Along the work side of the platform there shall be an emergency stop controlling the movement of the platform as well as the calendar bowl rotation.
- (4) The hoisting and lowering speed must not exceed 0.15 meter per second.
- (5) A hydraulic cylinder being part of the hoisting gear of a calendar work platform shall have a valve which, in the event of a hose or pipe fracture or considerable leakage, prevents the platform from moving downwards or retards its descent. Such a valve shall be mounted in or directly on the cylinder.
- (6) A calendar super work platform carried by wire rope or chain shall have a reliable catch.
- (7) An elevating screw of a calendar work platform shall be self locking bearing nuts and safety nuts shall serve as load-carrying devices.

#### **12. Examination and Inspection**

- (1) A device as referred to in paragraph 10 (1) above, shall when needed and at least twice a year, and in case of a calendar work platform once a month, be subjected to thorough examination by a competent person as long as it is being used. If a calendar work platform has been out of use for more than three months, thorough examination shall be carried out before it is used again.
- (2) In the course of examination, a check shall be made to ensure that safety devices are in working order and also that the hoisting and lowering speed of the calendar work platform does not exceed the permitted value.
- (3) An examination log book shall be maintained and made readily available.

#### **13. Hose Pipes**

- (1) A hose pipe used for cleaning near a rotating pair of rolls shall have a rounded nozzle or otherwise be arranged so that the nozzle cannot be caught in the nip.
- (2) A hose used for flushing liquid at a pressure exceeding 25 Kilogram/Centimeter shall have a constant pressure actuated valve for flow control. If needed for safety during handling the nozzle shall be mounted on a stand or the hose designed for two operators.

#### **14. Space inside a machine**

Any opening leading to a walkable passage into or through a machine must be blocked. This does not apply if the passage must be accessible for operational or maintenance purpose on condition that entering does not involve any risk.

#### **15. Inching**

If it is necessary, to operate a machine temporarily without the protective devices otherwise provided, the speed of the web shall be as low as possible and shall not exceed 15 meters per minute. The machine shall be governed by a hand operated constant pressure switch from a place where the operator can supervise those places where protective devices have been rendered inoperative.

## **16. Emergency stop**

An emergency stop must not break the energy supply to any device needed in an emergency or provoke any movement that might aggravate the situation. Braking provoked by the emergency stop must not be so violent as to cause any risk of injury.

## **17. Auxiliary measures**

In place where large quantities of pulp or broke are frequently handled, measures shall be taken to facilitate the work. Special attention shall be paid to the need for such measures in places where there are high temperatures.

## **18. Work Instructions**

- (1) Instructions shall be provided for the work routines necessary to promote safety during normal operation as well as during maintenance cleaning supervision and similar kinds of periodically recurrent tasks.
- (2) Work permit system should be adopted for maintenance and cleaning operations.

## **19. Other Safety Precautions**

- (1) Wherever risk of injury prevails, necessary caution boards or symbols should be displayed like moving equipments, Nip points, slippery area, men at work, etc.
- (2) Adequate training in safe operations should be imparted to workers at the time of induction into the factory and at periodical intervals not exceeding a year and whenever there is a job rotation or operational changes.
- (3) For paper machine speeds exceeding 200 meters per minute start up alarm should be provided before crawl and before being put to run.
- (4) All rotating elements should indicate direction of rotation.
- (5) Wherever nip is there, indication in bold letter to be provided.

## **20. Precautions against ignition**

Wherever there is danger of fire from accumulation of flammable or explosive dust, fumes or vapours or any combustible materials in air:-

- (a) all electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measures shall be adopted for prevention of accumulation of static charges to a dangerous extent;
- (c) workers shall wear shoes without iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited ;
- (e) transmission belts with iron fasteners shall not be used; and
- (f) all other precautions as are reasonably practicable, shall be taken to prevent initiation of ignition from all other possible sources such as open flames, frictional sparks overheated surfaces of machinery or plant, chemical or physical chemical reaction and radiant heat.

**21. Spontaneous ignition** - Where materials are likely to induce spontaneous ignition, care shall be taken to avoid formation of air pocket and to ensure adequate ventilation. The material susceptible to spontaneous ignition should be stored in dry condition and should be in heaps of such capacity and separated by such passage which will prevent fire. The materials susceptible to ignition and stored in the open shall be at a distance not less than 10 meters away from process or storage buildings.

## **22. Fire fighting system**

- (1) In every factory to which this schedule applies fire fighting arrangement shall be made wherein:
  - (i) the fire hydrant system shall be capable of supplying a minimum of 4,500 liters per minute at a pressure of not less than 7 kilograms per square cm.
  - (ii) adequate provision of water supply for firefighting shall be made with static



storage capacity of not less than 2 hours aggregate pumping.

- (2) Every factory employing five hundred or more persons shall provide
- (a) Trained and responsible fire fighting squad so as to effectively handle the fire-fighting and life saving equipment in the event of fire or other emergency. Number of persons in this squad will necessarily depend upon the size of risk involved, but in no case shall be less than eight such trained persons to be available at any time. The squad shall consist of watch and ward personnel, fire pump man and departmental supervisors and operators trained in the operation of fire and emergency services.
  - (b) Squad leaders shall preferably be trained in a recognised Government institution and their usefulness enhanced by providing residence on the premises.
  - (c) Squad personnel shall be provided with clothing and equipment including helmets, boots and belts.
  - (d) A muster roll showing the duties allocated to each member of the squad shall be prepared and copies supplied to each leader as well as displayed in prominent places so as to be easily available for reference in case of emergency.
  - (e) The pump man shall be thoroughly conversant with the location of all appliances. He shall be responsible for maintaining all firefighting equipment in proper working order. Any defect coming to his notice shall be immediately brought to the notice of squad leader.
  - (f) As far as is practicable, the fire pump room and the main gate(s) of the factory be connected to all manufacturing or storing areas through telephone interlinked and placed in a convenient location near such areas.

**23. Personnel Protective Equipment.-**

The occupier shall provide suitable personnel protective equipments such as respirators, hand gloves, shoes, helmets, goggles, earplug, aprons, etc, as per the relevant standard prescribed by the Bureau of Indian Standards or in absence of it, relevant international standards to the workers.

**24. Ventilation**

In all workrooms adequate ventilation by the circulation of fresh air shall be provided so as to maintain reasonable conditions of comfort and prevent injury to health of the workers employed therein.

**25. Precautions against dangerous fumes, gases, etc.-**

- (1) No person shall be required or allowed to enter any chamber, tank, vat, pit, pipe, flue or other confined space in any factory in which any gas, fume, vapour or dust is likely to be present to such an extent as to involve risk to persons being overcome thereby, unless it is provided with a manhole of adequate size or other effective means of egress.
- (2) No person shall be required or allowed to enter any confined space as is referred to in sub-paragraph (1), until all practicable measures have been taken to remove any gas, fume, vapour or dust, which may be present so as to bring its level within the permissible limits and to prevent any ingress of such gas, fume, vapour or dust and unless-
  - (a) a certificate in writing has been given by a competent person, based on a test carried out by himself that the space is reasonably free from dangerous gas, fume, vapour or dust; or
  - (b) such person is wearing suitable breathing apparatus and a belt securely attached to a rope the free end of which is held by a person outside the confined space.

**26. Medical facilities and records of examinations and tests:**

- (1) (a) The occupier of every factory to which the schedule applies, shall employ a qualified medical practitioner for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector-cum-Facilitator; and

- (b) Provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in health register **Form XXXVI**, which shall be kept readily available for inspection by the Inspector-cum-Facilitator.
- (3) Every worker employed in handling chemicals involved in the processes shall be examined by a Medical practitioner within 15 days of his first employment and re-examined atleast once in every 12 calendar months

#### **SCHEDULE-AZ**

**(See rule-103)**

#### **Permissible levels of certain chemical substances in work environment**

##### **1. Definitions**

For the purpose of this schedule

- (a) " mg/m<sup>3</sup>" means milligrams of a substance per cubic meter of air ;
- (b) "mppcm" means million particles of a substance per cubic meter of air ;
- (c) "ppm" means parts of vapour or gas per million parts of air by volume at 250 C and 760 mm of mercury pressure;
- (d) "Time weighted average concentration" means the average concentration of a substance in the air at any work location in a factory computed from evaluation of adequate number of air samples taken at that location spread over the entire shift on an day, after giving weightage to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

$$[(C_1T_1 + C_2T_2 + \dots + C_nT_n) / (T_1 + T_2 + \dots + T_n)]$$

Time weighted average concentration =

Where C<sub>1</sub> represents the concentration of the substance for duration T<sub>1</sub> (in hours);

C<sub>2</sub> represents the concentration of the substance for duration T<sub>2</sub> (in hours); and

C<sub>n</sub> represents the concentration of the substance for duration T<sub>n</sub> (in hours);

- (e) " Work location " means a location in a factory at which a worker works or may be required to work at any time during any shift on any day.

##### **2. Limits of concentrations of substance at work locations**

- (1) The time weighted average concentration of any substance listed in Table 1 or 2 of the schedule, at any work location in a factory during any shift on any day shall not exceed the limit of the permissible time weighted average concentration specified in respect of that substance:

Provided that in the case of a substance mentioned in Table 1 in respect of which a limit in terms of short term maximum concentration is indicated, the concentration of such a substance may exceed the permissible limit of the time weighted average concentration for the substance for short periods not exceeding 15 minutes at a time, subject to the condition that

- (a) such periods during which the concentration exceeds the prescribed time weighted average concentration are restricted to not more than 4 per shift;
- (b) the time interval between any two such periods of higher exposure shall not be less than 60 minutes ; and
- (c) at no time the concentration of the substance in the air shall exceed the limit of short term maximum concentration.

- (2) In the case of any substance given in Table 3, the concentration of the substance at any work location in a factory at any time during any day shall not exceed the limit of exposure for that substance specified in the Table.
- (3) In the cases where the word "skin" has been indicated against certain substance mentioned in Tables 1 and 3, appropriate measures shall be taken to prevent absorption through cutaneous routes particularly skin, mucous membranes and eyes as the limits specified in these Tables are for conditions where the exposure is only through respiratory tract.
- (4) (a) In case, the air at any work location contains a mixture of such substances mentioned in Tables 1, 2 or 3, which have similar toxic properties, the time weighted concentration of each of these substances during the shift should be such, that when these time weighted concentration divided by the respective permissible time weighted average concentration specified in the abovementioned tables, and the fractions obtained are added together, the total shall not exceed unity, i.e.  $C_1 / L_1 + C_2 / L_2 + C_3 / L_3 + \dots + C_n / L_n$  should not exceed unity when

When  $C_1, C_2, \dots, C_n$  are the time weighted concentration of toxic substances 1, 2 and in respectively, determined after measurement at work location;

and  $L_1, L_2, \dots, L_n$  are the permissible time weighted average concentration of the toxic substances 1, 2, ..... and in respectively.

(b) In case the air at any work location contains a mixture of substances mentioned in Table 1, 2 or 3, and these do not have similar toxic properties, then the time weighted concentration of each of these substances shall not exceed the permissible time weighted average concentration specified in the above mentioned tables, for that particular substance.

(c) The requirements in clauses (a) and (b) shall be in addition to the requirements in paragraphs 2 (1) and (2).

### 3. Sampling and evaluation procedures

- (1) Notwithstanding provisions in any other paragraphs, the sampling and evaluation procedures to be adopted for checking compliance with the provisions in the schedule shall be as per standard procedures in vogue from time to time.
- (2) Notwithstanding the provisions in paragraph 5, the following conditions regarding the sampling and evaluation procedure to be adopted checking compliance with the provision in this schedule are specified.
  - (a) For determination of the number of particles per cubic meter in item 1 (a) (i) (1) in Table 2, samples are to be collected by standard or midjet impringer and the counts made by light field technique.
  - (b) The percentage of quartz in the 3 formulae given in item 1 (A) (i) of Table 2 is to be determined from airborne samples.
  - (c) For determination of number of fibers as specified in item 2(A) of Table 2, the membrane filter method at 430 x magnification (4 mm objective) with phase contrast illumination should be used.
  - (d) Both for determination of concentration and percentage of quartz for use of the formula given in item 1 (a) (i) (2) of Table 2, the fraction passing through a size selector with the following characteristics should only be considered.

Aerodynamic diameter (Unity density sphere)	Percentage allowed by size-selector
2.0	20
2.5	75
3.5	50
5.0	25
10.0	0

### 4. Power to require assessment of concentration of substances

- (1) An Inspector-cum-Facilitator may, by an order in writing, direct the occupier of a factory to get before any specified date the assessment of the time weighted average concentration at any work location of any of the substances mentioned in tables 1, 2 or 3 carried out.
- (2) The results of such assessment as well as the method followed for air sampling and analysis for such assessment shall be sent to the Inspector-cum-Facilitator within three days from the date of completion of such assessment and also a record of the same kept readily available for inspection by an Inspector-cum-Facilitator

## 5. Exemption

If in respect of any factory or a part of a factory, the Chief Inspector-cum-Facilitator is satisfied: that, by virtue of the pattern of working time of the workers at different work locations or on account of other circumstances, no worker is exposed, in the air at the work locations, to a substance or substances specified in Tables I, 2 or 3 to such an extent as is likely to be injurious to his health, he (the Chief Inspector-cum-Facilitator) may by an order in writing, exempt the factory or a part of the factory from the requirements in paragraph 2, subject to such conditions, if any, as he may specify therein.

**TABLE 1**

Sl.N	Substances	Permissible limits of exposure			
		Time weighted average concentration (TWA) (8 hrs)		Short term maximum concentration (STEL) 15 min).*	
		ppm	Mg/m <sup>3</sup> **	ppm	Mg/m <sup>3</sup> **
(1)	(2)	(3)	(4)	(5)	(6)
1	Acetaldehyde	100	180	150	270
2	Acetic acid	10	25	15	37
3	Acetone	750	1,780	1,000	2,375
4	Acrolein	0.1	0.25	0.3	0.8
5	Acrylonitrile-skin (S.C)	2	4.5	-	-
6	Aldrin-skin	-	0.25	-	-
7	Allyl Chloride	1	3	2	6
8	Ammonia	25	18	35	27
9	Aniline-skin	2	10	-	-
10	Anisidine(o,p-isomers)-Skin	0.1	0.5	-	-
11	Arsenic & soluble compounds (as As)	-	0.2	-	-
12	Benzene (HC)	0.5	1.5	25	7.5
13	Beryllium & compounds (as Be) (S.C.)	-	0.002	-	-
14	Boron trifluoride-C	1	3	-	-
15	Bromine	0.1	0.7	0.3	2
16	Butane	800	1,900	-	-
17	2-Butanone (Methyl ethyl Ketone-MEK)	200	590	300	885
18	n-Butyl acetate	150	710	200	950

19	n-Butylalcohol-Skin-C	50	150	-	-
20	Sec/Tert Butyl acetate	200	950	-	-
21	Butyl mercaptan	0.5	1.5	-	-
22	Cadmium Dusts and salts (as Cd)	-	0.05	-	-
23	Calcium Oxide	-	2	-	-
24	Carbaryl (Sevin)	-	5	-	-
25	Carbofuran (Furadan)	-	0.1	-	-
26	Carbon disulphide-Skin	10	30	-	-
27	Carbon Monoxide	50	55	400	440
28	Carbon tetrachloride-Skin(S.C)	5	30	-	-
29	Chlordane-Skin	-	0.5	-	2
30	Chlorine	1	3	3	9
31	Chlorobenzene (Mono chlorobenzene)	75	350	-	-
32	Chloroform (S.C)	10	50	-	-
33	Bis (Chlororomethyl) ether (H.C.)	0.001	0.005	-	-
34	Chromic acid and chromates (as Cr)	-	0.05	-	-
35	Chromous salts (as Cr)	-	0.5	-	-
36	Copper Fume	-	0.2	-	-
37	Cotton dust, raw	-	0.2+	-	-
38	Cresol, all isomers-Skin	5	22	-	-
39	Cyanides (as CN)-Skin	-	5	-	-
40	Cyanogen	10	10	-	-
41	DDT (Dichlorodiphenyl trichloroethane)	-	1	-	-
42	Demeton Skin	0.01	0.1	-	-
43	Diazinon Skin	-	0.1	-	-
44	Dibutyl phthalate	-	5	-	-
45	Dichlorvos (DDVP)-Skin	0.1	1	-	-
46	Dieldrin-Skin	-	0.25	-	-
47	Dinitrobenzene (all isomers)-Skin	0.15	1	-	-
48	Dinitrotoluene-Skin	-	1.5	-	-
49	Diphenyl (Biphenyl)	0.2	1.5	-	-
50	Endosulfan (Thipdan)-Skin	-	0.1	-	-
51	Endrin-Skin	-	0.1	-	-
52	Ethyl acetate	400	1,400	-	-
53	Ethyl alcohol	1,000	1,900	-	-
54	Ethylamine	10	18	-	-
55	Fluorides (as F)	-	2.5	-	-

56	Fluorine	1	2	2	4
57	Formaldehyde (S.C)	1.0	1.5	2	3
58	Formic acid	5	9	-	-
59	Gasoline	300	900	500	1,500
60	Hydrazine-Skin(S.C)	0.1	0.1	-	-
61	Hydrogen Chloride-C	5	7	-	-
62	Hydrogen cyanide Skin C	10	10	-	-
63	Hydrogen Fluoride (as F)-C	3	2.5	-	-
64	Hydrogen peroxide	1	1.5	-	-
65	Hydrogen sulphide	10	14	15	21
66	Iodine C	0.1	1	-	-
67	Iron Oxide Fume (Fe <sub>2</sub> O <sub>3</sub> ) (as Fe)	-	5	-	-
68	Isoamyl acetate	100	525	-	-
69	Isomyl alcohol	100	360	125	450
70	Isobutyl alcohol	50	150	-	-
71	Lead, inorg dusts and fumes (asPb)	-	0.15	-	-
72	Lindane-Skin	-	0.5	-	-
73	Malathion -Skin	-	10	-	-
74	Manganese (as Mn) dust and compounds- C	-	5	-	-
75	Manganese fume (as Mn)	-	1	-	3
76	Mercury (as Hg)-Skin				
	(i)Alkyl compounds	-	0.01	-	0.03
	(ii)All forms except alkyl vapour	-	0.05	-	-
	(iii)Aryl and inorganic compounds	-	0.1	-	-
77	Methyl alcohol (Methanol)-Skin	200	260	350	310
78	Methyl cellosolve (2-Methoxy ethanol)- Skin	5	16	-	-
79	Methyl isobutyl ketone	50	205	75	300
80	Methyl isocyanate-Skin	0.02	0.05	-	-
81	Nepthalene	10	50	15	75
82	Nickel carbonyl (as Ni)	0.05	0.35	-	-
83	Nitric acid	2	5	5	10
84	Nitric oxide	25	30	-	-
85	Nitrobenzene-Skin	1	5	-	-
86	Nitrogen dioxide	3	6	5	10
87	Oil mist mineral	-	5	-	10

88	Ozone	0.1	0.2	0.3	0.6
89	Parathion skin	-	0.1	-	-
90	Phenol-skin	5	19	-	-
91	Phorate (Thimet)-Skin	-	0.05	-	0.2
92	Phosgene (Carbonyl chloride)	0.1	0.05	-	0.2
93	Phosphine	0.3	0.4	1	1
94	Phosphoric acid	-	1	-	3
95	Phosphorous (yellow)	-	0.1	-	-
96	Phosphorous Pentachloride	0.1	1	-	-
97	Phosphorous trichloride	0.2	1.5	0.5	3
98	Picric acid – Skin	-	0.1	-	0.3
99	Phridine	5	15	-	-
100	Silane (Silicon tetrahydride)	5	7	-	-
101	Sodium hydroxide-C	-	2	-	-
102	Styrene, monomer (phenylethylene)	50	215	100	425
103	Sulphur dioxide	2	5	5	10
104	Sulphur hexafluoride	1,000	6,000	-	-
105	Sulphuric acid	-	1	-	-
106	Tetraethyl lead (as Pb)-Skin	-	0.1	-	-
107	Toluene (Toluol)	100	375	150	560
108	O-Toluidine-Skin (S.C)	2	9	-	-
109	Tributyl Phosphate	0.2	2.5	-	-
110	Trichloroethylene	50	270	200	1080
111	Uranium, natural (as U)	-	0.2	-	0.6
112	Vinyl chloride (H.C)	5	10	-	-
113	Welding fumes	-	5	-	-
114	Xylene (o-, m-, p-isomers)	100	435	150	655
115	Zinc Oxide				
	(i) Fume	-	5.0	-	10
	(ii) Dust (Total dust)	-	10.00	-	-
116	Zirconium compounds (as Zr)	-	5	-	10

ppm : Parts of vapour or gas per million parts of contaminated air by volume at 25°C and 760 (mm of mercury)

mg/m<sup>3</sup> : milligram of substance per cubic meter of air

\* : Not more than 4 times a day with atleast 60 min. interval between successive exposure

\*\* : mg/m<sup>3</sup> = (Molecular weight X ppm)/24.45

Lint : free dust as measured by the vertical elutriator cotton-dust sampler

C : denotes ceiling limit

skin : denotes potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye

S.C : denotes suspected human carcinogens

H.C : denotes confirmed human carcinogens

**TABLE 2**

Substance	Permissible time weighed average concentration
<b>Silica, Si O<sub>2</sub></b>	
(a) Crystalline	
(i) Quartz	
(1) In terms of dust count	(10600)/(%Quartz+10) mppcm
(2) In terms of respirable dust	10/(% respirable Quartz+2) mg/m <sup>3</sup>
(3) In terms of total dust	30/(% Quarts+3) mg/m <sup>3</sup>
(ii) Cristobalite	Half the limits given against quartz
(iii) Tridymite	Half the limits given against quartz
(iv) Silica, fused	Same limits as for quartz
(v) Tripoli	Same limit as in formula in item (2) given against quartz. 10 mg/m <sup>3</sup> , total dust
(b) Amorphous	
<b>Silicates</b>	
Asbestos (H.C)	(a) Amosite 0.5 fiber/cc*** (b) Chrysotile 1.0 fiber/cc *** (c) Crocidolite 0.2 fiber/cc ***

\*\*\*

(i) For fibre greater than 5µm in length and less than 5µm in breadth with length to breadth ratio equal to or greater than 3:1

(ii) As determined by the membrane filter method at 400-450 x magnification (4mm objective) phase contrast illumination.

Portland cement 10mg/m<sup>3</sup>. Total dust containing less than 1% quartz.

Coal dust 2mg/m<sup>3</sup> respirable dust fraction containing less than 5% quartz.

Mppcm = Million particles per cubic metre of air, based on impinge samples by light-field techniques.

\* As determined by the membrane filter method at 400-450 x magnification (4mm objective) phase contrast illumination.

#### **Respirable Dust:-**

Fraction passing a size selector with the following characteristics:

Aerodynamic Diameter (µm)(unit)(density sphere)	% passing selector
2.0	90
2.5	75



3.5	50
5.0	25
10.0	0

**Schedule-BA**  
**(See rule 114(1)(c))**  
**Safety Data Sheet**

**Identity of Material:**

Product Name			Chemical	
Trade Name			Synonyms	
Formula	Label Class:	Category	CAS Number	UN Number
Regulated Identification	Shipping Name Codes/Label			HAZCHEM code
	Hazardous Waste Identification Number			
Hazardous	Ingredients		CAS Number	
1.				
2.				
3.				
4.				

**2. Physical and Chemical Properties:**

Physical State (Gas/Liquid/Solid)	Boiling point in degree C	Vapour pressure at 35 degree C ..... mm of Hg.
Appearance	Melting/Freezing point in degree C	Evaporation rate at 30 degree C
Odour	Vapour density (air = 1)	Solubility in water at 30 degree C
Others (corrosivity, etc.)	Specific gravity (water = 1)	<sup>p</sup> H

**3. Fire and Explosive Hazards Data:**

Explosion/ Flash Flammability	point (degree) C	LEL%	Autoignition Temperature degree C
	Flash point (degree) C		TDG Flammability (Classification)
		UEL%	

#### 4. Reactive Hazards:

Stability to	Impact	(Hazardous Combustion Products)
	Static Discharge	(Hazardous Decomposition Product)
	Reactivity	(Conditions to avoid)
Hazardous Polymerisation	May/may not occur	(Conditions to avoid)
Incompatibility	-	(Materials to avoid)

#### 5. Health Hazard Data:

Routes of Entry	(Inhalation, skin, mucuous membranes and eye contact and ingestion)		
Effects of Exposure/Symptoms			
LD50 (in rat) (Orally or percutaneous absorption) (mg/kg body weight)	LC50 (in rat) (mg/l)/4 hour		
Permissible Exposure Limit (PEL)	PPM mg/ cu.m	Short term Exposure Limit (STEL)	PPM mg / cu.m
Threshold Limit Value (TLV) of ACGIH	PPM mg/ cu.m	Odour Threshold	PPM mg / cu.m

#### 6. Hazard Specification:

NEPA Hazard Signal	Health	Flammability	Stability	Special
Known Hazards				
Combustible Liquid	Water Reactive Material			Irritant
Flammable Material	Oxidiser			Sensitiser
Pyrophoric Material	Organic Peroxide			Carcinogen
Explosive Material	Corrosive Material			Mutagen
Unstable Material	Compressed Gas			Others (Specify)

#### Acronyms and Glossary of terms:

CAS	:	Chemical Abstract Service Registration Number
UN Number	:	United Nations Number
HAZCHEM CODE	:	Emergency Action Code (EAC), allocated by the Joint Committee of Fire Brigade Operations
TDG	:	Transport of dangerous goods-Flammability

Flammability classification by United Nations

NFPA : National Fire Protection Association, USA

**Guidelines:**

All efforts should be made to fill all the columns. No column should be left blank. In case certain information is not applicable or available, N/App. or N/Av. sign may be used.

**SCHEDULE-BB**

**(See rule-2(1)(o))**

**PART I**

- (a) **Toxic Chemicals:** Chemicals having the following values of acute toxicity and which owing to their physical and chemical properties, are capable of producing major accident hazards:

S.No.	Toxicity	Oral toxicity LD <sub>50</sub> (mg/kg)	Dermal toxicity LD <sub>50</sub> (mg/kg)	Inhalation toxicity LC <sub>50</sub> (mg/l)
1.	Extremely toxic	>5	<40	<0.5
2.	Highly toxic	>5-50	>40-200	<0.5-2.0
3.	Toxic	>50-200	>200-1000	>2-10

**(b) Flammable Chemicals :**

- (i) flammable gases: Gases which at 20°C and at standard pressure of 101.3KPa are :-

- (a) ignitable when in a mixture of 13 percent or less by volume with air, or ;
- (b) have a flammable range with air of atleast 12 percentage points regardless of the lower flammable limits.

**Note :** The flammability shall be determined by tests or by calculation in accordance with methods adopted by International Standards Organization ISO Number 10156 of 1990 or by Bureau of Indian Standard ISI Number 1446 of 1985.

- (ii) **extremely flammable liquids** : chemicals which have flash point lower than or equal to 23°C and boiling point less than 35°C.
- (iii) **very highly flammable liquids** : chemicals which have a flash point lower than or equal to 23°C and initial boiling point higher than 35°C.
- (iv) **highly flammable liquids** : chemicals which have a flash point lower than or equal to 60°C but higher than 23°C.
- (v) **flammable liquids** : chemicals which have a flash point higher than 60°C but lower than 90°C.

- (c) **Explosives** : explosives mean a solid or liquid or pyrotechnic substance (or

a mixture of substances) or an article.

- (a) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings ;
- (b) which is designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self sustaining exothermic chemical reaction.

## PART II

### LIST OF HAZARDOUS AND TOXIC CHEMICALS

S.No	Name of Chemical	C.A.S. No.	R.T.E.C.S.	Remarks
1.	Acetaldehyde	75-07-0	AB 1925000	T, F
2.	Acetic acid	64-19-7	AF 1225000	C
3.	Acetic anhydride	108-24-7	AK 1925000	C
4.	Acetone	67-64-1	AL 3150000	F
5.	Acetone cyanohydrin	75-86-5	OD 9275000	T
6.	Acetone thiosemicarbazide	1752-30-3	-	-
7.	Acetonitrile	75-05-8	AL 7700000	T, F
8.	Acetylene	74-86-2	AO 9600000	F, R
9.	Acetylene tetra chloride	79-34-5	KI 8575000	T
10.	Acrolein	107-02-8	AS 1050000	T, F
11.	Acrylamide	79-06-1	AS 3325000	T
12.	Acrylonitrile	107-13-1	AT 5250000	T, F
13.	Adiponitrile	111-69-3	AV 2625000	-
14.	Aldicarb	116-06-3	-	T
15.	Aldrin	309-00-2	IO 2100000	T
16.	Ally alcohol	107-18-6	BA 5075000	T, F
17.	Allyl amine	107-11-9	BA 5425000	HR-3, T, F
18.	Allyl chloride	107-05-1	UC 7350000	T
19.	Aluminium (powder)	7429-90-5	BD 0330000	-
20.	Aluminium azide	39108-14-0	-	HR-3
21.	Aluminium borohydride	-	-	E, F
22.	Aluminium chloride	7446-70-0	BD 0525000	HR-3, R
23.	Aluminium fluoride	7784-18-1	BD 0725000	HR-3, R
24.	Aluminium phosphide	20859-73-8	BD 1400000	HR-3, T
25.	Amino diphenyl	92-67-1	DU 8925000	T
26.	Amino pyridine	504-29-0	US 1575000	T
27.	Aminophenol-2	95-55-6	SJ 49500000	HR-3, T
28.	Aminopterin	54-62-6	-	T
29.	Amiton	78-53-5	-	T
30.	Amiton dialate	-	-	
31.	Ammonia	7664-41-7	BO 0875000	T
32.	Ammonium chloro platinate	16919-58-7	-	T
33.	Ammonium nitrate	6484-52-2	BR 9050000	HR-3, T
34.	Ammonium nitrite	-	-	E
35.	Ammonium picrate	131-74-8	BS 3855000	HR-3, O
36.	Anabasine	494-52-0	BV 4375000	HR-3, T
37.	Aniline	62-53-3	BW 6650000	T
38.	Aniline 2,4,6-Trimethyl	88-05-1	-	T
39.	Anthraquinone	84-65-1	CB 4725000	HR-2, T
40.	Antimony pentafluoride	7783-70-2	CC 5800000	HR-3, T

41.	Antimycin A	1397-94-0	CD 0350000	HR-3
42.	ANTU	86-88-4	YT 9275000	T
43.	Arsenic pentoxide	1303-28-2	CG 2275000	HR-3, T
44.	Arsenic trioxide	1327-53-3	CG 3325000	HR-3, T
45.	Arsenous trichloride	7784-34-1	-	T
46.	Arsine	7784-42-1	CG 6475000	T
47.	Asphalt	8052-42-4	CI 9900000	HR-3, T
48.	Azinphos-ethyl	2642-71-9	-	T
49.	Azinphos methyl	86-50-0	TE 1925000	HR-3, T
50.	Bacitracin	1405-87-4	CP 0175000	HR-3
51.	Barium azide	18810-58-7	CQ 8500000	HR-3, E
52.	Barium nitrate	10022-31-8	CQ 9625000	R
53.	Barium nitride	12047-79-9	-	HR-3, E
54.	Benzal chloride	100-44-7	-	T
55.	Benzenamine, 3-Trifluoromethyl	-	-	
56.	Benzene	71-43-2	CY 1400000	T, F
57.	Benzene sulfonyl chloride	98-09-9	DB 8750000	HR-3, T
58.	Benzene, 1-(chloromethyl)-4 Nitro	-	-	-
59.	Benzene arsenic acid	-	-	T
60.	Benzidine	92-87-5	DC 9625000	T
61.	Benzidine salts	92-87-5	DC 9625000	HR-3, T
62.	Benzimidazole, 4,5-Dichloro-2 (Trifluoromethyl)	-	-	-
63.	Benzoquinone-P	106-51-4	DK 2625000	HR-3, T
64.	Benzotrichloride	-	-	T
65.	Benzoyl chloride	-	-	R, T
66.	Benzoyl peroxide	94-36-0	DM 8575000	T, E
67.	Benzyl chloride	100-44-7	XS 8925000	T
68.	Beryllium (powder)	7440-41-7	DS 1750000	T
69.	Bicyclo(2,2,1) Heptane-2-carbonitrile	-	-	-
70.	Biphenyl	92-52-4	DU 8050000	T
71.	Bis (2-chloroethyl) sulphide	505-60-2	-	T
72.	Bis (Chloromethyl) Ketone	534-07-6	-	-
73.	Bis (Tert-butyl peroxy) cyclohexane	-	-	R
74.	Bis (Terbutylperoxy) butane	-	-	R
75.	Bis (2,4,6-TriNitrophenyl) amine	-	-	T, E
76.	Bis (Chloromethyl) Ether	542-88-1	-	-
77.	Bismuth and compounds	7440-69-9	-	T
78.	Bisphenol-A	80-05-7	-	-
79.	Bitoscanate	-	-	-
80.	Boron Powder	7440-42-8	ED 7350000	HR-3, T
81.	Boron trichloride	10294-34-5	ED 1925000	HR-3, T
82.	Boron trifluoride	7637-07-2	-	T
83.	Boron trifluoride comp. with methylether 1:1	353-42-4	-	T
84.	Bromine	7726-95-6	EF 9100000	T
85.	Bromine pentafluoride	7789-30-2	EF 9350000	T, C
86.	Bromo chloro methane	74-97-5	PA 5250000	T



87.	Bromodialone	28772-56-7	-	-
88.	Butadiene	106-99-0	-	R
89.	Butane	106-97-8	EJ 4200000	F
90.	Butanone-2	78-93-3	EL 6475000	T, R
91.	Butyl amine tert	75-64-9	EO 3330000	HR-3, T, F
92.	Butyl glycidial ether	2426-08-6	TX 4200000	HR-D
93.	Butyl isovalerate	-	-	-
94.	Butyl peroxy maleate tert	-	-	-
95.	Butyl vinyl ether	-	-	-
96.	Butyl-n-mercaptan	109-79-5	EK 6300000	-
97.	C.I. Basic green	-	-	-
98.	Cadmium oxide	1306-19-0	EV 1930000	T
99.	Cadmium stearate	-	-	T
100.	Calcium arsenate	7778-44-1	CG 0830000	
101.	Calcium carbide	75-20-7	EV 9400000	HR-3
102.	Calcium cyanide	592-01-8	EW 0700000	HR-3
103.	Camphenchlor (Toxaphene)	-	-	-
104.	Cantharidin	-	-	-
105.	Captan	133-06-2	GW 5075000	
106.	Carbachol chloride	51-83-2	GA 0875000	HR-3
107.	Carbaryl	63-25-2	FC 5950000	T
108.	Carbofuran (Furadan)	1563-66-2	FB 9450000	T
109.	Carbon tetrachloride	56-23-5	FG 4900000	T
110.	Carbon disulphide	75-15-0	FF 6650000	T, F
111.	Carbon monoxide	630-08-0	FG 3500000	T, F
112.	Carbophenothion	786-19-6	-	T
113.	Carvone	-	-	-
114.	Cellulose nitrate	8050-88-2	-	E, F
115.	Chloroacetic acid	79-11-8	AF 8575000	HR-3
116.	Chlordane	57-74-9	PB 9800000	
117.	Chlorofenvinphos	470-90-6	-	T
118.	Chlorinated benzene	-	-	-
119.	Chlorine	7782-50-5	FO 2100000	T
120.	Chlorine oxide	10049-04-4	FO 3000000	T
121.	Chlorine trifluoride	7090-91-2	FO 2800000	
122.	Chlormephos	24934-91-6	TD 5170000	HR-3
123.	Chlormequat chloride	999-81-5	-	-
124.	Chloroacetal chloride	-	-	C
125.	Chloroacetaldehyde	107-20-0	AB 2450000	-
126.	Chloroaniline-2	-	-	-
127.	Chloroaniline-4	106-47-8	-	-
128.	Chlorobenzene	108-90-7	CZ 0175000	T, F
129.	Chloroethyl chloroformate	-	-	-
130.	Chloroform	67-66-3	FS 9100000	T
131.	Chloroformyl morpholine	-	-	T
132.	Chloromethane	74-87-3	PA 6300000	-
133.	Chloromethyl methyl ether	107-30-2	KN 6650000	T
134.	Chloronitrobenzene	25167-93-5	CZ 0855000	HR-D
135.	Chlorophacinone	3691-35-8	NK 5335000	HR-3

136.	Chlorosulphonic acid	7790-94-5	-	C
137.	Chlorothiophos	21923-23-9	TF 1590000	HR-3
138.	Chloroxuron	1982-47-4	-	-
139.	Chromic acid	1333-82-0	GB 6650000	T, E
140.	Chromic chloride	10025-73-7	-	T, E
141.	Chromium powder	7740-47-3	GB 4200000	T, E
142.	Cobalt carbonyl	10210-68-1	GG 0300000	T
143.	Cobalt Nitrilmethylidyne compound	-	-	T
144.	Cobalt (powder)	7440-48-4	GF 8750000	HR-3, T
145.	Colchicine	64-86-8	-	-
146.	Copper and compounds	7440-50-8	GL 5325000	T
147.	Copper oxychloride	-	-	T
148.	Coumafuryl	-	-	-
149.	Coumaphos	56-72-4	-	-
150.	Coumateralyl	-	-	-
151.	Crimidine	-	-	T
152.	Crotenaldehyde	123-73-9	-	-
153.	Crotonaldehyde	4170-30-3	GP 9499000	T, F
154.	Cumene	98-82-8	GR 8575000	-
155.	Cyanogen bromide	-	-	-
156.	Cyanogen iodide	-	-	-
157.	Cyanophos	-	-	-
158.	Cyanothoate	-	-	T
159.	Cyanuric fluoride	-	-	-
160.	Cyclo hexylamine	108-91-8	GX 0700000	-
161.	Cyclohexane	110-82-7	GU 6300000	-
162.	Cyclohexanone	108-94-1	GW1050000	T, F
163.	Cycloheximide	66-81-9	-	T
164.	Cyclopentadiene	542-92-7	GY 1000000	T, F
165.	Cyclopentane	287-92-3	GY 2390000	-
166.	Cyclotetramethylenetetranitramine	-	-	E
167.	CyclotrimethylenetrinitraMine	121-82-4	XY 9450000	E
168.	Cypermethrin	-	-	-
169.	DDT	50-29-3	KJ 3325000	HR-3, T
170.	Decaborane (1:4)	17702-41-9	HD 1400000	HR-3
171.	Demeton	298-03-3	TF 3125000	HR-3, T
172.	Demeton S-Methyl	919-86-8	TG 1750000	HR-3
173.	Di-n-propyl peroxydicarbonate (Conc. 80%)	-	-	R
174.	Dialifos	-	-	T
175.	Diazodinitrophenol	-	-	E
176.	Dibenzyl peroxydicarbonate (Conc > = 90%)	-	-	-
177.	Diborane	19287-45-7	HQ 9275000	-
178.	Dichloroaceylene	7572-29-4	AP 1080000	HR-3
179.	Dichlorobenzalkonium chloride	-	-	-
180.	Dichloroethyl ether	-	-	-
181.	Dichloromethyl phenylsilane	-	-	-
182.	Dichlorophenol-2,6	87-65-0	SK 8750000	HR-3

183.	Dichlorophenol-2,4	120-83-2	SK 8575000	HR-3
184.	Dichlorophenoxy acetic acid	94-75-7	AG 6825000	HR-3
185.	Dichloropropane-2,2	594-20-7	-	HR-3
186.	Dichlorosalicylic acid-3,5	320-72-9	VO 2450000	HR-3
187.	Dichlorvos (DDVP)	62-73-7	TC 0350000	T
188.	Dicrotophos	141-66-2	TC 3850000	-
189.	Dieldrin	60-57-1	IO 1750000	HR-3
190.	Diepoxy butane	298-18-0	EJ 8400000	HR-3
191.	Diethyl carbamazine citrate	1642-54-2	TL 1225000	HR-3
192.	Diethyl chlorophosphate	814-49-3	TD 1400000	HR-3
193.	Diethyl ethanolamine	100-37-8	KK 5075000	HR-3
194.	Diethyl peroxydicarbonate (Conc. 30 %)	-	-	R
195.	Diethyl phenylene diamine	-	-	-
196.	Diethylamine	109-89-7	HZ 8750000	HR-2, T
197.	Diethylene glycol	111-46-6	ID 5950000	HR-3
198.	Diethylene glycol dinitrate	693-21-0	ID 6825000	HR-3, E
199.	Diethylene triamine	111-40-0	IE 1225000	HR-3
200.	Diethyleneglycol butyl ether	112-34-5	KJ 9100000	HR-3
201.	Diglycidyl ether	2238-07-5	KN 2350000	HR-3
202.	Digitoxin	71-63-6	IH 2275000	HR-3
203.	Dihydroperoxypropane (Conc > = 30%)	-	-	R
204.	Diisobutyl peroxide	-	-	R
205.	Dimefox	115-26-4	-	T
206.	Dimethoate	60-51-5	-	-
207.	Dimethyl dichlorosilane	75-78-5	-	-
208.	Dimethyl hydrazine	57-14-7	MV 2450000	HR-3
209.	Dimethyl nitrosoamine	62-75-9	IQ 05250900	HR-3
210.	Dimethyl P phenylene diamine	99-98-9	ST 0874000	HR-3
211.	Dimethyl phosphoramido cyanidic acid (TABUM)	-	-	T
212.	Dimethyl phosphorochloridothioate	2524-03-0	TD 1830000	HR-3
213.	Dimethyl sulfolane (DMS)	1003-78-7	XN 0525000	HR-3
214.	Dimethyl sulphide	75-18-3	-	HR-3
215.	Dimethylamine	124-40-3	IP 8750000	HR-3
216.	Dimethylaniline	121-69-7	BX 4725000	HR-3, T
217.	Dimethylcarbonyl chloride	-	-	T
218.	Dimetilan	-	-	-
219.	Dinitro O-cresol	1335-85-9	GO 9450000	HR-3
220.	Dinitrophenol	25550-58-7	SL 2625000	HR-3, T, E
221.	Dinitrotoluene	25321-14-6	XT 1300000	HR-3
222.	Dinoseb	-	-	-
223.	Dinoterb	-	-	-
224.	Dioxane-p	123-91-1	JG 8225000	HR-3, T, F
225.	Dioxathion	78-34-2	TE 3350000	HR-3
226.	Dioxine N	1746-01-6	HP 3500000	-
227.	Diphacinone	82-66-6	-	T
228.	Diphosphoramidate octamethyl	-	-	-



229.	Diphenyl methane di-isocyanate (MDI)	101-68-8	NQ 9350000	HR-3
230.	Dipropylene Glycol Butyl ether	29911-28-2	UA 8225000	HR-2
231.	Dipropylene glycol methylether	34590-94-8	JM 1575000	HR-1
232.	Disec-butyl peroxydicarbonate (conc. > 80 %)	-	-	-
233.	Disufoton	298-04-4	TD 9275000	T
234.	Dithiazamine iodide	-	-	-
235.	Dithiobiurate	541-53-7	EC 1575000	HR-3
236.	Endosulfan	115-29-7	RB 9275000	-
237.	Endothion	2778-04-3	TF 8225000	HR-3
238.	Endrin	72-20-8	IO 1575000	HR-3
239.	Epichlorohydrine	106-89-8	TX 4900000	T, F
240.	EPN	2104-64-5	TB 1925000	T
241.	Ergocalciferol	50-14-6	KE 1050000	HR-3
242.	Ergotamine tartarate	379-79-3	-	-
243.	Ethanesulfenyl chloride, 2 chloro	-	-	-
244.	Ethanol 1-2 dichloracetate	-	-	-
245.	Ethion	563-12-2	TE 4550000	T
246.	Ethoprophos	13194-48-4	-	-
247.	Ethyl acetate	141-78-6	AH 5425000	HR-3, F
248.	Ethyl alcohol	64-17-5	KQ 6300000	HR-3, F
249.	Ethyl benzene	100-41-4	DA 0700000	HR-3
250.	Ethyl bis amine	-	-	-
251.	Ethyl bromide	74-96-4	KH 6475000	T
252.	Ethyl carbamate	-	-	-
253.	Ethyl ether	60-29-7	KI 5775000	HR-3
254.	Ethyl hexanol-2	-	-	-
255.	Ethyl mercaptan	75-08-1	KI 9625000	T, F
256.	Ethyl mercuric phosphate	-	-	-
257.	Ethyl methacrylate	97-63-2	-	-
258.	Ethyl nitrate	625-58-1	QU 7900000	HR-3, TER
259.	Ethyl thiocyanate	542-90-5	XK 9900000	HR-3
260.	Ethylamine	75-04-7	KH 2100000	-
261.	Ethylene	74-85-1	KU 5340000	HR-3
262.	Ethylene chlorohydrine	107-07-3	KK 0875000	T
263.	Ethylene dibromide	106-93-4	KH 9275000	HR-3
264.	Ethylene diamine	107-15-3	KH 8575000	C, F
265.	Ethylene diamine hydrochloride	-	-	-
266.	Ethylene flourohydrine	371-62-0	-	-
267.	Ethylene glycol	107-21-1	KW 2975000	HR-3
268.	Ethylene glycol dinitrate	628-96-6	KW 5600000	HR-3, T, E
269.	Ethylene oxide	75-21-8	KX 2450000	HR-3, TFR
270.	Ethyleneimine	151-56-4	KX 5075000	T, F
271.	Ethylene di chloride	75-34-3	KI 0175000	-
272.	Fenamiphos	22224-92-6	TB 3675000	-
273.	Femithrothion	122-14-5	-	-
274.	Fensulphothion	115-90-2	TF 3850000	-
275.	Fluometil	-	-	T

276.	Fluorine	7782-41-4	LM 6475000	HR-3, T
277.	Fluoro 2-hydroxy butyric acid amide salt ester	-	-	T
278.	Fluoroacetamide	640-19-7	AC 1225000	HR-3, T
279.	Fluoroacetic acid amide salts and esters	-	-	T
280.	Fluoroacetylchloride	-	-	-
281.	Fluorobutric acid amide salt esters	-	-	T
282.	Fluorocrotonic acid amides salts esters	-	-	T
283.	Fluorouracil	51-21-8	YR 0350000	HR-3
284.	Fonofos	944-22-9	TA 5950000	-
285.	Formaldehyde	50-00-0	LP 8925000	HR-3, T
286.	Formetanate hydrochloride	-	-	-
287.	Formic acid	64-18-6	LQ 4900000	HR-3
288.	Formoparanate	17702-57-7	FB 9880000	HR-3
289.	Formothion	2540-82-1	-	-
290.	Fosthiotan	21548-32-3	-	-
291.	Fuberidazole	-	-	-
292.	Furan	110-00-9	LT 8524000	HR-3
293.	Gallium Trichloride	7440-55-3	LW 8610000	HR-3
294.	Glyconitrile (Hydroxyacetonitrile)	107-16-4	AM 0350000	-
295.	Guanyl-4-nitrosaminoguyanyl-1-tetrazene	-	-	E
296.	Heptachlor	76-44-8	PC 0700000	HR-3, E
297.	Hexa methyl terta-oxyacyclononate (conc. 75%)	-	-	R
298.	Hexachlorobenzene	118-74-1	DA 2975000	HR-3
299.	Hexachlorocyclohexan (Lindane)	58-89-9	GV 4900000	-
300.	Hexachlorocyclopentadiene	77-47-4	GY 1225000	HR-3
301.	Hexachlorodibenzo-p-dioxin	57653-85-7	HP 3280000	HR-3
302.	Hexachloronapthalene	1335-87-1	QJ 7350000	HR-3
303.	Hexafluoropropanone sesquihydrate	13098-39-0	UC 2660000	HR-3
304.	Hexamethyl phosphoroamide	680-31-9	TD 0875000	HR-3
305.	Hexamethylene diamine N N dibutyl	-	-	-
306.	Hexane	110-54-3	MN 9275000	HR-3
307.	Hexanitrostilbene 2,2,4,4,6,6	-	-	E
308.	Hexene	592-41-6	MP 6600100	HR-3
309.	Hydrogen selenide	7783-07-5	MX 1050000	HR-3, T
310.	Hydrogen sulphide	7783-06-4	MX 1225000	HR-3, T, F
311.	Hydrazine	302-01-2	MU 7175000	HR-3
312.	Hydrazine nitrate	-	-	-
313.	Hydrochloric acid (Gas)	7647-01-0	MW4025000	HR-3, T
314.	Hydrogen	1333-74-0	MW8900000	HR-3, F, R
315.	Hydrogen bromide	10035-10-6	MW3850000	-
316.	Hydrogen cyanide	74-90-8	MW6825000	T, F
317.	Hydrogen fluoride	7664-39-3	MW7875000	T, C
318.	Hydrogen peroxide	7722-84-1	MX 0900000	HR-3
319.	Hydroquinone	123-31-9	MX 3500000	HR-3
320.	Indene	95-13-6	NK 8225000	HR-3

321.	Indium powder	7440-74-6	NL 1050000	HR-3
322.	Indomethacin	53-86-1	NL 3500000	HR-3
323.	Iodine	7553-56-2	NN 1575000	-
324.	Iridium tetrachloride	10025-97-5	NO 3610000	HR-3
325.	Iron penta carbonyl	13463-40-6	NO 4900000	-
326.	Isobenzan	297-78-9	-	T
327.	Isoamyl alcohol	123-51-3	EL 5425000	HR-3
328.	Isobutyl alcohol	78-83-1	NP 9625000	HR-3
329.	Isobutyro nitrile	78-82-0	TZ 4900000	HR-3
330.	Isocyanic acid 3 4-dichlorophenyl ester	102-36-3	NQ 8760000	HR-3
331.	Isodrin	465-73-6	IO 1925000	HR-3, T
332.	Isofluorophosphate	-	-	-
333.	Isophorone diisocyanate	4098-71-9	NQ 5400000	HR-3
334.	Isopropyl alcohol	67-63-0	NT 8050000	HR-3
335.	Isopropyl chlorocarbonate	108-23-6	LQ 6475000	HR-3
336.	Isopropyl formate	625-55-8	LQ 8750000	HR-3
337.	Isopropyl methyl pyrazolyl dimethyl carbamate	-	-	-
338.	Juglone (5-Hydroxy Napthalene-1, 4 dione)	-	-	T
339.	Ketene	463-51-4	OA 7700000	HR-3
340.	Lactonitrile	78-97-7	OD 8225000	HR-3
341.	Lead arsenite	10031-13-7	OF 8600000	HR-3
342.	Lead at high temp (molten)	7439-92-1	OF 7525000	-
343.	Lead azide	13424-46-9	OF 8650000	HR-3, E
344.	Lead styphanate	-	-	-
345.	Leptophos	21609-90-5	TB 1720000	HR-3
346.	Lenisite	-	-	-
347.	Liquified petroleum gas	68476-85-7	SE 7545000	HR-2
348.	Lithium hydride	7580-67-8	OJ 6300000	HR-3
349.	N-Dinitrobenzene	-	-	-
350.	Magnesium powder or ribbon	7439-95-4	OM 2100000	HR-3
351.	Malathion	121-75-5	WM8400000	-
352.	Maleic anhydride	108-31-6	ON 3675000	HR-3, T
353.	Malononitrile	109-77-3	OO 3150000	HR-3
354.	Managanese Tricarbonyl cyclopentadiene	-	-	-
355.	Mechlor ethamine	-	-	-
356.	Mephospholan	950-10-7	JP 1050000	HR-3
357.	Mercuric chloride	7487-94-7	-	-
358.	Mercuric oxide	21908-53-2	OW 8750000	HR-3
359.	Mercury acetate	7439-97-6	OV 4550000	-
360.	Mercury fulminate	628-86-4	OW 4050000	HR-3, E
361.	Mercury methyl chloride	115-09-3	OW 1225000	HR-3
362.	Mesitylene	108-67-8	OX 6825000	HR-3
363.	Methacrolein diacetate	10476-95-6	-	-
364.	Methacrylic anhydride	760-93-0	OZ 5700000	HR-3
365.	Methacrylonitrile	126-98-7	UD 1400000	-



366.	Methacryloyl oxyethyl isocyanate	-	-	-
367.	Methanidophos	-	-	-
368.	Methane	74-82-8	PA 1490000	HR-3
369.	Methanesulphonyl fluoride	558-25-8	PB 2975000	HR-3
370.	Methidathion	950-37-8	-	-
371.	Methiocarb	-	-	-
372.	Methonyl	16752-77-5	-	-
373.	Methoxy ethanol (2-methyl cellosolve)	-	-	-
374.	Methoxyethyl mercuric acetate	151-38-2	OV 6300000	HR-3
375.	Methacryloyl chloride	-	-	-
376.	Methyl 2-chloroacrylate	80-63-7	AS 6380000	HR-3
377.	Methyl alcohol	67-56-1	PC 1400000	HR-3, F
378.	Methyl amine	74-89-5	PF 6300000	HR-3, C, F
379.	Methyl bromide (Bromomethane)	74-83-9	PA 4300000	T
380.	Methyl chloride	74-87-3	PA 6300000	T
381.	Methyl chloroform	71-55-6	KJ 2975000	T, F
382.	Methyl chloroformate	79-22-1	-	-
383.	Methyl cyclohexene	591-47-9	-	HR-2, F
384.	Methyl disulphide	-	-	-
385.	Methyl ethyl ketone peroxide (conc. 60 %)	1338-23-4	EL 9450000	R
386.	Methyl formate	107-31-3	LQ 8925000	HR-3
387.	Methyl hydrazine	60-34-4	MV 5600000	HR-3
388.	Methyl isobutyl ketone	108-10-1	SA 9275000	-
389.	Methyl isocyanate	624-83-9	NQ 9450000	HR-3, T, F
390.	Methyl isothiocyanate	8066-01-1	TX 9665000	HR-3
391.	Methyl mercuric dicyanamide	502-39-6	-	-
392.	Methyl Mercaptan	74-93-1	PB 4375000	-
393.	Methyl Methacrylate	80-62-6	OZ 5075000	HR-3
394.	Methyl phencapton	3735-23-7	TD 6125000	HR-3
395.	Methyl phosphoric dichloride	676-97-1	TA 1840000	HR-3
396.	Methyl thiocyanate	556-64-9	XL 1575000	HR-3
397.	Methyl trichlorosilane	75-79-6	VV 4550000	HR-3
398.	Methyl vinyl ketone	79-84-4	-	HR-3
399.	Methylene bis (2-chloroaniline)	101-14-4	CY 1050000	-
400.	Methylene chloride	75-09-2	PA 8050000	T
401.	Methylenebis-4, 4(2-chloroaniline)	101-14-4	CY 1050000	T
402.	Metolcarb	1129-41-5	-	-
403.	Mevinphos	7786-34-7	GQ 5250000	T
404.	Mezacarbate	315-18-4	-	-
405.	Mitomycin C	50-07-7	-	-
406.	Molybdenum Powder	7439-98-7	QA 4680000	HR-3
407.	Monocrotophos	6923-22-4	TC 4375000	HR-3
408.	Morpholine	110-91-8	QD 6475000	HR-3
409.	Muscicol	2763-96-4	-	-
410.	Mustard gas	505-60-2	-	-
411.	N-Butyl acetate	123-86-4	-	-
412.	N-Butyl alcohol	71-36-3	-	-

413.	N-Hexane	110-54-3	MN 9275000	-
414.	N-Methyl-N, 2,4,6-Tetranitroaniline	479-45-8	BY 6300000	C, F
415.	Naphtha	8030-30-6	DE 3030000	HR-3, E
416.	Naphtha solvent	-	-	E
417.	Naphthalene	91-20-3	QJ 0525000	F
418.	Naphthyl amine	134-32-7	QM 1400000	HR-3, T
419.	Nickel carbonyl/nickel tetracarbonyl	13463-39-3	QR 6300000	HR-3, T, F
420.	Nickel Powder	7440-02-0	QR 5950000	HR-3, T
421.	Nicotine	54-11-5	QS 5250000	-
422.	Nicotine sulphate	65-30-5	QS 9525000	HR-3
423.	Nitric acid	7697-37-2	QU 5775000	HR-3
424.	Nitric oxide	10102-43-9	QX 0525000	T
425.	Nitrobenzene	2491-52-3	CN 2710000	HR-3, T
426.	Nitrocellulose (dry)	9004-70-0	-	-
427.	Nitrochlorobenzene	100-00-5	CZ 1050000	-
428.	Nitrocyclohexane	1122-60-7	GV 6600000	HR-3
429.	Nitrogen	7727-37-9	QW9700000	HR-3
430.	Nitrogen dioxide	10102-44-0	QW9800000	HR-3, T
431.	Nitrogen oxide	10024-97-2	QX 1350000	HR-3, T
432.	Nitrogen trifluoride	7783-54-2	QX 1925000	HR-3
433.	Nitroglycerine	55-63-0	QX 2100000	HR-3, T, E
434.	Nitropropane-1	108-03-2	TZ 5075000	HR-3
435.	Nitropropane-2	79-46-9	TZ 5250000	HR-3, T, F
436.	Nitroso dimethyl amine	156-10-5	JK 0175000	HR-3
437.	Nonane	27214-95-8	RA 8550000	HR-1
438.	Norbormide	991-42-4	RB 8750000	HR-3
439.	O-Cresol	95-48-7	GO 6300000	-
440.	O-Nitro Toluene	88-72-2	TX 3150000	-
441.	O-Toluidine	95-53-4	XU 2975000	-
442.	O-Xylene	95-47-6	ZE 2450000	-
443.	O/P Nitroaniline	100-01-6	BY 7000000	-
444.	Oleum	-	-	-
445.	OO Diethyl S ethyl sulphanyl Methyl phosphorothioate	-	-	T
446.	OO Diethyl S propylthio methyl phosphodithiodate	-	-	T
447.	OO Diethyl S ethylsulphanylmethylphosphorothioate	-	-	T
448.	OO Diethyl S ethylsulphonylmethylphosphorothioate	-	-	T
449.	OO Diethyl S ethylthiomethylphosphorothioate	-	-	T
450.	Organo rhodium complex	-	-	-
451.	Orotic acid	65-86-1	RM 3180000	HR-2
452.	Osmium tetroxide	20816-12-0	RN 1140000	HR-3
453.	Oxabain	-	-	-
454.	Oxamyl	23135-22-0	-	-

455.	Oxetane 3,3-bis(chloromethyl)	-	-	-
456.	Oxidiphenoxarsine	-	-	-
457.	Oxy disulfoton	2497-07-6	TD 8600000	HR-3, T
458.	Oxygen (liquid)	7782-44-7	RS 2060000	HR-3, T
459.	Oxygen difluoride	7783-41-7	RS 2100000	HR-3, O
460.	Ozone	10028-15-6	RS 8225000	HR-3, T
461.	P-nitrophenol	-	-	-
462.	Paraffin	8002-74-2	RV 0350000	HR-3
463.	Paraxon (Diethyl 4 Nitrophenyl phosphate)	311-45-5	-	T
464.	Paraquat	1910-42-5	DW 275000	-
465.	Paraquat methosulphate	-	-	-
466.	Parathion	56-38-2	TF 4550000	HR-3, T
467.	Parathion methyl	298-00-0	TG 0175000	T
468.	Paris green	-	-	-
469.	Penta borane	19624-22-7	RY 8925000	HR-3, T, F
470.	Penta chloro ethane	76-01-7	KI 6300000	HR-3
471.	Penta chlorophenol	87-86-5	SM 6300000	HR-3, T
472.	Pentabromophenol	608-71-9	SM 6125000	HR-3
473.	Pentachloro naphthalene	1321-64-8	QK 0300000	HR-3
474.	Pentadecyl-amine	2570-26-5	RZ 2450000	HR-3
475.	Pentaerythritol tetranitrate	78-11-5	RZ 2620000	HR-3, T, E
476.	Pentane	109-66-0	RZ 9450000	HR-2
477.	Pentanone	107-87-9	SA 7875000	HR-3
478.	Perchloric acid	7601-90-3	SC 7500000	HR-3
479.	Perchloroethylene	127-18-4	KX 3850000	-
480.	Peroxyacetic acid	79-21-0	SD 8750000	HR-3
481.	Phenol	108-95-2	SJ 3325000	HR-3/T
482.	Phenol, 2,2-thiobis (4,6-Dichloro)	-	-	-
483.	Phenol 2,2-thiobis (4 chloro 6 methyl phenol)	-	-	-
484.	Phenol, 3-(1-methyl ethyl)-methylcarbamate	-	-	-
485.	Phenyl hydrazine hydrochloride	59-88-1	-	-
486.	Phenyl mercury acetate	62-38-4	-	-
487.	Phenyl silatrane	2097-19-0	YJ 9050000	HR-3
488.	Phenyl thiourea	103-85-5	YU 1400000	HR-3
489.	Phenylene p-diamine	106-50-3	SS 8050000	HR-3
490.	Phorate	298-02-2	TD 9450000	HR-3, T
491.	Phosazetin	4104-14-7	-	T
492.	Phosfolan	947-02-4	NJ 6475000	HR-3
493.	Phosgene	75-44-5	SY 5600000	HR-3, T
494.	Phosmet	-	-	-
495.	Phosphamidon	13171-21-6	-	T
496.	Phosphine	7803-51-2	SY 7525000	HR-3, T, F
497.	Phosphoric acid	7664-38-2	TB 6300000	HR-3
498.	Phosphoric acid dimethyl (4-methyl thio) phenyl	3254-63-5	-	T
499.	Phosphorothioic acid dimethyl S(2-	-	-	T



	bis) Ester			
500.	Phosphorothioic acid methyl (ester)	-	-	T
501.	Phosphorothioic acid, OO Dimethyl S-(2methyl)	-	-	T
502.	Phosphorothioic, methyl-ethyl ester	-	-	T
503.	Phosphorous	7723-14-0	TH 3495000	HR-3, T, F
504.	Phosphorous oxychloride	10025-87-3	TH 4798000	T, F
505.	Phosphorous pentoxide	1314-56-3	TH 3945000	HR-3, T, F
506.	Phosphorous trichloride	7719-12-2	TH 3675000	HR-3, T, F
507.	Phosphorous penta chloride	10026-13-8	TB 6125000	HR-3, T, F
508.	Phthalic anhydride	85-44-9	TI 3150000	HR-3
509.	Phylloquinone	84-80-0	-	-
510.	Physostigmine	57-47-6	TJ 2100000	HR-3
511.	Physostigmine salicylate (1:1)	57-64-7	TJ 2450000	HR-3
512.	Picric acid (2,4,6-trinitrophenol)	88-89-1		T, E
513.	Picrotoxin	124-87-8	TJ 9100000	HR-3
514.	Piperidine	110-89-4	TM 3500000	HR-3
515.	Piprotal	5281-13-0	BF 4911000	HR-3
516.	Pirinifos-ethyl	23505-41-1	-	-
517.	Platinous chloride	10025-65-7	TP 2275000	HR-3
518.	Platinum tetrachloride	13454-96-1	TP 2275500	HR-3
519.	Potassium arsenate	10124-50-2	CG 3800000	HR-3
520.	Potassium chlorate	3811-04-9	FO 0350000	HR-3
521.	Potassium cyanide	151-50-8	TS 8750000	HR-3
522.	Potassium hydroxide	1310-58-3	TT 2100000	HR-3
523.	Potassium nitride	29285-24-3	-	HR-3
524.	Potassium nitrite	7758-09-0	TT 3750000	HR-3
525.	Potassium peroxide	17014-71-0	TT 4450000	HR-3
526.	Potassium silver cyanide	506-61-6	TT 5775000	HR-3
527.	Powdered metals and mixtures	-	-	-
528.	Promecarb	2631-37-0	-	-
529.	Promurit	5836-73-7	-	-
530.	Propanesultone	1120-71-4	RP 5425000	-
531.	Propargyl alcohol	107-19-7	UK 5075000	-
532.	Propargyl bromide	-	-	-
533.	Propen-1,-2-chloro-1,3-diol diacetate	-	-	T
534.	Propiolactone beta	57-57-8	RQ 7350000	-
535.	Propionitrile	107-12-0	UF 9625000	-
536.	Propionitrile, 3-chloro	-	-	-
537.	Propiophenone, 4-amino	-	-	-
538.	Propyl chloroformate	109-61-5	-	-
539.	Propylene dichloride	78-87-5	TX 9625000	F
540.	Propylene glycol allylether	1331-17-5	UA 4900000	HR-3
541.	Propylene imine	75-55-8	CM 8050000	R
542.	Propylene oxide	75-56-9	TZ 2975000	-
543.	Prothoate	2275-18-5	-	-
544.	Pseudocumene	95-63-6	DC 3325000	-
545.	Pyrazoxon	-	-	T
546.	Pyrene	129-00-0	UR 2450000	HR-3

547.	Pyridine	110-86-1	UR 8400000	HR-3, T
548.	Pyridine, 2-methyl-3-vinyl	140-76-1	-	-
549.	Pyridine, 4-nitro-1-oxide	-	-	-
550.	Pyridine 4-nitro-1-oxide	-	-	-
551.	Pyriminil	53558-25-1	YT 9690000	HR-3
552.	Quinaliphos	-	-	-
553.	Quinone	106-51-4	DK 2625000	T, F
554.	Rhodium trichloride	10049-07-7	VI 9275000	HR-3
555.	Salcomine	14167-18-1	-	-
556.	Sarin	-	-	-
557.	Selenious acid	7783-00-8	-	-
558.	Selenium Hexafluoride	7783-79-1	VS 9450000	-
559.	Selenium oxychloride	7791-23-3	-	-
560.	Semicarbazide hydrochloride	563-41-7	-	-
561.	Silane (4-aminio butyl) diethoxy-meth	-	-	-
562.	Sodium	7440-23-5	VY 0686000	HR-3
563.	Sodium anthra-quinone-1-sulphonate	128-56-3	-	-
564.	Sodium arsenate	7631-89-2	-	-
565.	Sodium arsenite	7784-46-5	CG 3675000	HR-3
566.	Sodium azide	26628-22-8	VY 8050000	HR-3
567.	Sodium cacodylate	124-65-2	-	-
568.	Sodium chlorate	7775-09-9	FO 0525000	HR-3, T
569.	Sodium cyanide	143-33-9	VZ 7525000	HR-3
570.	Sodium fluoro-acetate	62-74-8	AH 9100000	HR-3
571.	Sodium hydroxide	1310-73-2	WB 4900000	HR-3, ERO
572.	Sodium pentachloro-phenate	131-52-2	SM 6490000	HR-3
573.	Sodium picramate	-	-	T, D
574.	Sodium selenate	13410-01-0	-	-
575.	Sodium selenite	10102-18-8	VS 7350000	HR-3, T, E
576.	Sodium sulphide	1313-82-2	WE 1905000	HR-3
577.	Sodium tellorite	10102-20-2	WY 2450000	HR-3
578.	Stannane acetoxy triphenyl	-	-	-
579.	Stibine (Antimony hydride)	7803-52-3	WJ 0700000	HR-3
580.	Strychnine	57-24-9	WL 2275000	HR-3
581.	Strychnine sulphate	60-41-3	WL 2550000	HR-3
582.	Styphinic acid (2,4-6-trinitroresorcinol)	82-71-3	VH 3540000	HR-3
583.	Styrene	100-42-5	WL 3675000	HR-3
584.	Sulphotep	3689-24-5	XN 4375000	T
585.	Sulphoxide, 3-chloropropyl octyl	-	-	-
586.	Sulphur dichloride	10545-99-0	WS 4500000	HR-3, T
587.	Sulphur dioxide	7446-09-5	WS 4550000	HR-3, T
588.	Sulphur monochloride	10025-67-9	WS 4300000	HR-3
589.	Sulphur tetrafluoride	7783-60-0	WT 4800000	HR-3
590.	Sulphur trioxide	7446-11-9	-	-
591.	Sulphuric acid	7664-93-9	WS 5600000	HR-3
592.	Tellurium (Powder)	13494-80-9	WY 2625000	HR-3
593.	Tellurium hexafluoride	7783-80-4	WY 2800000	HR-3



594.	TEPP (Tetraethyl pyrophosphate)	107-49-3	UX 6825000	HR-3, T
595.	Terbufos	13071-79-9	-	-
596.	Tert-Butyl alcohol	75-65-0	-	-
597.	Tert-Butyl peroxy carbonate	-	-	-
598.	Tert-Butyl peroxy isopropyl	-	-	-
599.	Tert-Butyl peroxyacetate (Conc >= 70 %)	-	-	-
600.	Tert-Butyl peroxyvalerate (Conc >= 77%)	927-07-1	-	-
601.	Tert-Butylperoxyiso-butyrate	-	-	-
602.	Tetra hydrofuran	109-99-9	LU 5950000	HR-3, T, F
603.	Tetra methyl lead	75-74-1	TP 4725000	HR-3
604.	Tetra nitromethane	509-14-8	PB 4025000	HR-3
605.	Tetra-chlorodibenzo-p-dioxin 1,2,3,7,8,(TCDD)	-	-	-
606.	Tetraethyl lead	78-00-2	TP 4550000	HR-3
607.	Tetrafluoroethylene	116-14-3	-	-
608.	Tetramethylene disulphotetramine	-	-	T
609.	Thallic oxide	1314-32-5	XG 2975000	HR-3, T
610.	Thallium carbonate	6533-73-9	XG 4000000	HR-3, T
611.	Thallium sulphate	10031-59-1	XG 6600000	HR-3, T
612.	Thallic chloride	7791-12-0	XG 4200000	HR-3, T
613.	Thallic malonate	2757-18-8	OO 1770000	HR-3, T
614.	Thallic sulphate	7446-18-6	XG 6800000	HR-3, T
615.	Thiocarbamide	2231-57-4	-	-
616.	Thiocyanic acid, 2-(Benzothioazolythio) methyl	21564-17-0	-	-
617.	Thiofamide	39196-18-4	-	-
618.	Thiometon	640-15-3	-	-
619.	Thionazin	-	-	-
620.	Thionyl chloride	7719-09-7	XM 5150000	HR-3, C
621.	Thiophenol	108-98-5	DC 0525000	-
622.	Thiosemicarbazide	79-19-6	VT 4200000	HR-3
623.	Thiourea (2-chloro-phenyl)	5344-82-1	-	-
624.	Thiourea (2-methyl phenyl)	-	-	-
625.	Tirpate (2,4-dimethyl 1-1,3-di-thiolane)	-	-	T
626.	Titanium powder	7440-32-6	XR 1702000	HR-3
627.	Titanium tetra-chloride	7550-45-0	XR 1925000	HR-3
628.	Toluene	108-88-3	XS 5250000	HR-3, T
629.	Toluene 2,4-di-isocyanate	584-84-9	CZ 6300000	HR-3, T, F
630.	Toluene 2,6-di isocyanate	584-84-9	CZ 6300000	-
631.	Trans 1 4-di chloro-butane	-	-	-
632.	Tri nitro anisole	-	-	T
633.	Tri (Cyclohexyl) methylstannyl 1,2,4 triazole	-	-	-
634.	Tri(Cyclohexyl) stannyl-1H-1,2,3-triazole	-	-	-
635.	Triaminotrinitrobenzene	3058-38-0	-	HR-3

636.	Triamphos	1031-47-6	-	-
637.	Triazophos	24017-47-8	TF 5635000	HR-3
638.	Tribromophenol 2,4,6	118-79-6	SN 1225000	HR-3
639.	Trichloro naphthalene	1321-65-9	QK 4025000	HR-3
640.	Trichloro chloromethyl silane	1558-25-4	-	-
641.	Trichloroacetyl chloride	76-02-8	AO 7140000	HR-2
642.	Trichlorodichlorophenylsilane	-	-	-
643.	Trichloroethyl silane	-	-	-
644.	Trichloroethylene	79-01-6	KX 4550000	HR-3
645.	Trichloromethane sulphenyl chloride	594-42-3	PB 0370000	HR-3
646.	Trichloronate	327-98-0	-	-
647.	Trichlorophenol 2,3,6	933-75-5	SN 1300000	HR-3
648.	Trichlorophenol 2,4,5	95-95-4	SN 1400000	HR-3
649.	Trichlorophenyl silane	98-13-5	VV 6650000	HR-3
650.	Trichlorophon	-	-	-
651.	Triethoxy silane	998-30-1	VV 6682000	HR-3
652.	Triethylamine	121-44-8	YE 0175000	HR-2
653.	Triethylene melamine	-	-	-
654.	Trimethyl chlorosilane	75-77-4	VV 2710000	HR-3
655.	Trimethyl propane phosphite	824-11-3	-	-
656.	Trimethyl tin chloride	1066-45-1	-	-
657.	Trinitro aniline	-	-	-
658.	Trinitro benzene	99-35-4	DC 3850000	HR-3, T, E
659.	Trinitro benzoic acid	129-66-8	DI 0920000	HR-3, T, E
660.	Trinitro phenetole	-	-	T, E
661.	Trinitro-m-cresol	602-99-3	GP 3675000	HR-3, T, E
662.	Trinitrotoluene	118-96-7	XU 0180000	HR-3
663.	Tri orthocresyl phosphate	78-30-8	TD 0350000	-
664.	Triphenyl tin chloride	639-58-7	-	-
665.	Tris (2-chloroethyl) amine	-	-	-
666.	Turpentine	8006-64-2	YO 8400000	HR-3
667.	Uranium and its compounds	-	-	T
668.	Valinomycin	2001-95-8	YV 9468000	HR-3
669.	Vanadium pentoxide	1314-62-1	YW 2450000	HR-3, T
670.	Vinyl acetate monomer	108-05-4	-	-
671.	Vinyl bromide	593-60-2	KU 8400000	HR-3
672.	Vinyl chloride	75-01-4	KU 9625000	HR-3, T
673.	Vinyl cyclohexane dioxide	106-87-6	RN 8640000	HR-3
674.	Vinyl fluoride	75-02-5	YZ 7351000	HR-3, T
675.	Vinyl norbornene	3048-64-4	RC 0350000	HR-1
676.	Vinyl toluene	25013-15-4	WL 5075000	T, F
677.	Vinyledene chloride	75-35-4	YZ 8061000	HR-3
678.	Warfarin	81-81-2	GN 4550000	T, E
679.	Warfarin Sodium	-	-	-
680.	Xylene dichloride	28347-13-9	-	-
681.	Xylidine	1300-73-8	ZE 8575000	HR-3, T
682.	Zinc dichloropentanitrile	1300-73-8	-	-
683.	Zinc phosphide	1314-84-7	ZH 4900000	HR-3
684.	Zirconium & compounds	7440-67-7	ZH 7070000	F