

17. Process heating — The method of providing heat for a process 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 inflammable gas, vapour or dust coming into contact with the flame, or exhaust gases or other hot agency likely to cause ignition. So far as practicable, the heating medium shall be automatically controlled at a pre-determined temperature below the danger temperature.

18. Escape of materials —

(a) Provision shall be made in plant, sewers, drains, flues, ducts, culverts and buried pipes to prevent the escape and spread of any liquid, gas, vapour, fume or dust likely to give rise to fire or explosion, both during normal working and in the event of accident or emergency.

(b) If escape occurs, such substances shall be removed expeditiously and efficiently at the point of liberation. The effluents shall be trapped and rendered safe outside the danger area.

19. Leakage of inflammable liquids — (a) Provision shall be made to confine by means of bound walls, sumps, etc., possible leakages from vessel containing inflammable liquids.

(b) Adequate and suitable fixed fire-fighting appliances shall be installed in the vicinity of such vessels.

20. Cleaning of Empty Containers — (a) All empty containers which have held inflammable liquids and metal containers which have held Sulphuric acid shall be rendered permanently safe as soon as practicable and shall not be repaired or destroyed until such cleaning has been completed. Storage of Combustible Materials

(b) Combustible and inflammable materials shall not be stored in close proximity to chemicals which are liable to cause ignition.

(c) Rubbish shall be removed from building without delay and placed in special metal containers provided with close fitting lids. The contents shall be removed daily and suitably dealt with. Waste products containing inflammable or explosive materials shall not be placed on rubbish heaps but shall be destroyed in an appropriate manner.

21. Installing of Pipe Lines for Inflammable Liquids — All pipe lines for the transport of inflammable liquids shall be protected from breakage, shall be arranged so that there is no risk of mechanical damage from vehicles and shall be so laid that they drain throughout without the collection of deposits at any part. All flanged joints, bends and other connections shall be regularly inspected. Cocks and valves shall be so constructed that explosive residues cannot collect therein. The open and closed positions of all cocks and valves shall be clearly indicated on the outside.

22. Packing of Reaction Vessels — Packing and jointing materials for reaction vessels (including covers, manhole covers, and exhaust pipes) and in pipe lines and high or low temperature insulating material shall not contain material which are combustible or which react with the products of the plant.

23. 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 to a dangerous

degree, shall have attached to it a pressure gauge, and a proper safety valve or other equally efficient means to relieve the pressure, maintained in good condition. Nothing in these Rules shall apply to metal bottles or cylinders used for the transport of compressed gases.

24. Vigorous or delayed reactions — Suitable provision, such as automatic and distant control shall be made for controlling the effects of unduly vigorous or delayed reactions. Automatic flooding or blanketing shall be provided for in the event of an accident.

25. Examination, testing and repair of plant — Examination, testing and repair of plant part which have been in contact with explosive and inflammable material or which is under pressure, shall only be carried out under proper supervision.

26. Alarm systems —(a) Gravity or pressure feed systems of supplying inflammable materials to the various parts of the buildings or plant shall be fitted with alarm systems, automatic cut-offs or other devices to prevent overcharging or otherwise endangering the plant.

(b) The amount of inflammable material taken into a building in bulk containers at any one time shall be kept as low as practicable.

(c) Adequate steps shall be taken to prevent the escape of inflammable and explosive vapours from any container into the atmosphere of any building.

GAS, VAPOUR, FUME OR DUST RISKS

27. Escape of Gases, Etc., — (a) Effective steps shall be taken to prevent the escape of dangerous gases, vapours, fumes or dust from any part of the plant, by the total enclosure of the process involved or by the provision of efficient exhaust draught. Effective arrangements shall be made to ensure that in the event of failure of the control measure provided in compliance of the foregoing, the process shall stop immediately.

(b) In the event of any such escape, provision shall be made to trap the materials and render them safe.

28. Danger due to Effluents — (a) Adequate precautions shall be taken to prevent the mixing of effluents which may cause dangerous or poisonous gases to be evolved.

(b) Effluents which may contain or give rise in the presence of other effluents to such gases shall be provided with independent drainage system to ensure that they may be trapped and rendered safe.

29. Staging — (a) Staging shall not be erected over any open vessel unless the vessel is so constructed and ventilated as to prevent the emission of vapour or fumes about such staging;

(b) Where such staging is provided to give access to higher levels in large plants, effective means shall be provided at all levels with direct means of access to the outside of the room or building and thence to ground level;

(c) Such staging shall be fitted with suitable handrails and toe boards and the floors and staging shall be impervious and easily cleaned.

30. Instructions as regards risk — Before commencing work, every worker shall be fully instructed on the properties of the materials they have to handle, and of the

dangers from any gas, fume, vapour or dust which may be evolved during the process. Workers shall also be instructed in the measures to be taken to deal with such an escape in the event of emergency.

31. Breathing Apparatus — (a) There shall be provided in every factory where dangerous gas, or fume is liable to escape sufficient supply of —

- (i) breathing apparatus of an approved make for the hazards involved;
- (ii) oxygen and suitable means of its administration; and
- (iii) lifebelts.

The breathing apparatus and other appliances required by this Rule shall—

- (i) be maintained in good order and kept in an ambulance room or in some other place approved in writing by the Chief Inspector; and
 - (ii) be thoroughly inspected once in every month by a competent person, appointed in writing by the occupier, and a record of their condition shall be entered in a book provided for that purpose, which shall be produced when required by an Inspector.
- (b) Workers shall be trained, and given a periodic refresher course in the use of breathing apparatus and respirators;

(c) Respirators shall be kept properly labelled in clean dry light-proof cabinets, and if liable to be affected by fumes shall be protected by suitable containers. Respirators shall be dried and cleaned after use and shall be periodically disinfected.

32. Treatment of Persons — In every room or place wherever required in writing by the Chief Inspector there shall be affixed official cautionary notice regarding gassing burns. Such notice shall be legible by day and by night and shall be printed in the language understood by the majority of the workers.

33. Personal Protective Equipment— (a) Suitable protective clothing shall be provided for the use of operators — (i) when operating valves or cocks controlling fluids which by their nature, pressure or temperature would be highly dangerous if a blow-out occurred or when cleaning chokes in systems containing such fluids if pressure is likely to exit behind the chokes;

(ii) when there is danger of injury by absorption through the skin during the performance of normal duties or in the event of emergency;

(iii) whenever there is the risk of injury in handling corrosive substances, hot or cold articles and sharp or rough objects; and

(iv) when there is the risk of poisonous materials being carried away on their clothes.

(b) There shall be provided for the use of all persons employed in the processes specified in Schedule II to this Schedule an adequate supply of suitable protective equipment including gloves, overalls, and protective footwear, and of goggles and respirators. Respirators shall be of a type approved in writing by the Chief Inspector;

(c) Protective equipment shall be provided and stored in the appropriate place for use during abnormal conditions or in an emergency;

(d) Arrangements shall be made for the proper and efficient cleaning of all such protective equipment.

34. Cloak rooms — There shall be provided and maintained for the use of all persons employed in the processes specified in Schedule II to this Schedule a suitable cloak room, for clothing put off during working 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.

35. Special Bathing Accommodation — (a) There shall be provided for the use of all persons employed in the processes specified Schedule III to this Schedule separate sanitary conveniences and sufficient and suitable bathing facilities, which shall be to the satisfaction of the Chief Inspector.

(b) A bath register shall be kept containing the names of all persons employed in these processes and an entry of the date when each person takes a bath.

36. Entry into Vessels — (a) Before any person enters, for any purpose except that of rescue, any absorber, boiler, culvert, drain, flue, gas purifier, sewer, still, tank, tower, vitriol chamber or other place where there is reason to apprehend the presence of dangerous gas or fume, a responsible person appointed in writing by the occupier for the purpose, shall personally examine such place and shall certify in writing in a book kept for the purpose either that such place is isolated and sealed from every source of such gas or fume and is free from danger, or that it is not so isolated and sealed and free from danger. No person shall enter any such place which is certified not to be so isolated and sealed and free from danger unless he is wearing a breathing apparatus, and (where there are no cross stays or obstructions likely to cause entanglement) a life-belt, the free end of the rope attached to which shall be left with a man outside, whose sole duty shall be to keep watch and to draw out the wearer if he appears to be affected by gas or fume. The belt and rope shall be so adjusted and worn that the wearer can be drawn up head foremost through any manhole or opening.

(b) A person entering for the purpose of rescue any such place for which a clearance certificate has not been issued shall wear breathing apparatus and a life-belt in the manner specified.

37. Examination and Repair of Plant — Where poisonous materials are likely to be present the examination and repair of plant and piping shall only be done under the supervision of a competent person, and after the plant and piping has been thoroughly cleaned and ventilated. When opening vessels and breaking joints in pipe lines, respirators, goggles and protective clothing shall be worn to the extent required by the competent person.

38. Storage of Acid Carboys — Carboys containing nitric acid or "mixed" acid shall be stored in open-sided sheds detached from other buildings, and placed on a flooring of sandstone, brick, or other suitable inorganic materials. A passageway shall be provided and kept free from obstruction between every four rows of such carboys. An ample supply of water shall be available for washing away spilt acid and all precautions shall be taken to prevent workers being exposed to fumes.

CORROSIVE OR DELETERIOUS SUBSTANCES RISKS

39. Buildings — All buildings and plant shall be sited with due regard to possible dangers from accidental liberation or splashing of corrosive and deleterious liquids, and shall be so designed as to facilitate thorough washing and cleaning. The construction of staging and other parts of buildings shall be carried out with materials impervious and resistant to corrosion so far as practicable.

40. Leakage — (a) All plant shall be so designed and constructed as to obviate the escape of corrosive liquid. 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 localise any escape of liquid. (b) Catch pits, bund walls, or other suitable precautions shall be provided to restrict the serious effects of such leakages. Catch pits shall be placed below joints in pipe-lines where there is danger involved to maintenance and other workers from such leakage.

(c) Passages and work-stations shall not be situated directly below any part of plant where there is risk of escape of dangerous liquid. Access to such parts shall, so far as practicable, be prohibited, and danger notices shall be affixed at suitable points.

41. Precautions against escape— Adequate precautions shall be taken to prevent the escape of corrosive or deleterious substances and means shall be provided for rendering safe any such escape.

42. Drainage— Adequate drainage shall be provided and shall lead to special treatment tanks where deleterious material shall be neutralised or otherwise rendered safe before it is discharged into ordinary drains or sewers.

43. Covering of Vessels—(a) Every fixed vessel or structure containing any dangerous material, and not so covered as to eliminate all reasonable risk of accidental immersion in it of any portion of the body of a worker, shall be so constructed that there is no foothold on the top or the sides.

(b) Such vessel shall, unless its edge is at least 90 centimeters above the adjoining ground or platform, be securely fenced to a height of at least three 90 centimeters above such adjoining ground or platform.

(c) No plank or gangway shall be placed across or inside any such vessel, unless such plank or gangway is at least 45 centimeters wide, and is securely fenced on both sides by rails spaced at 22 centimeters apart to a height of at least 90 centimeters, or by other equally efficient means.

(d) 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 at least 90 centimeters, secure barriers shall be so placed as to prevent passage between them:

Provided that paragraph (b) of this rule shall not apply to —

(i) saturators used in the manufacture of Sulphate of Ammonia; and

(ii) that part of the sides of brine evaporating pans which require raking, drawing or filling.

44. Ventilation — Adequate ventilation shall be provided and maintained at all times in rooms or buildings where dangerous gas, vapour, fume or dust may be evolved.

45. Means of Escape — Adequate means of escape from rooms or buildings in the event of a leakage of corrosive liquids shall be provided and maintained.

46. Treatment of Personnel — In all places where (strong acids or dangerous corrosive liquids are used) — (a) there shall be provided for use in an emergency —

(i) adequate and readily accessible means of drenching with cold water of persons and the clothing of persons, who have become splashed with such liquid;

(ii) adequate special arrangements to deal with any person who has been splashed with poisonous material that can be absorbed through the skin;

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

(b) Except where the manipulation of such corrosive liquids is so carried on as to prevent risk of personal injury from splashing or otherwise there shall be provided for those who have to manipulate such liquids, sufficient and suitable goggles and gloves or other suitable

protection for the eyes and hands. If gloves are provided they shall be collected, examined, and cleansed at the close of the day's work and shall be repaired or renewed when necessary.

47. Maintenance — (a) Before any examination or repair are carried out on plant or pipe lines, a competent person shall issue a clearance certificate permitting such examination or repairs.

(b) Adequate precautions shall be taken to liberate any pocket of gas or liquid which may have been formed in pipe lines, and which may cause corrosive spray at the point where dismantling takes place.

48. Washing Facilities— (1) There shall be provided and maintained in every factory for the use of employed persons adequate and suitable facilities for washing which shall include soap and nail brushes or other suitable means of cleaning and facilities shall be conveniently accessible and shall be kept in a clean and orderly condition.

(2) If female workers are employed, separate washing facilities shall be provided and so enclosed or screened that the interiors are not visible from any place where persons of the other sex work or pass, the entrance to such facilities shall bear conspicuous notice in the language understood by the majority of the workers "For Women Only" and shall also be indicated pictorially.

49. Mess-Room Facilities— In every factory there shall be provided and maintained for the use of those remaining on the premises during the rest intervals, suitable and adequate mess room or canteen accommodation which shall be furnished with sufficient tables and chairs or benches with back rests and where sufficient drinking water is available.

50. Ambulance Room — (a) in every factory in which more than 250 persons are employed on the processes to which these rules apply there shall be provided and maintained in good order an Ambulance Room. The Ambulance Room shall be a separate room used only for the purpose of treatment and rest. It shall have a floor space of not less than 9.3 square meter and smooth, hard and impervious walls and floor, and shall be provided with ample means of natural and artificial lighting. It shall contain all the items shown in **Schedule IV**. Where persons of both sexes are employed, arrangements shall be made at the Ambulance Room for their separate treatment. The Ambulance Room shall be placed under the charge of a qualified nurse or other person trained in First Aid, who shall always be readily available during working hours and shall keep a record of all cases of accidents or sickness, treated in the room.

(b) In every factory there shall be provided and maintained in good condition a suitably constructed ambulance van for the purpose of removal of serious cases of accidents or sickness, unless arrangements have been made with hospital or other place in-telephonic communication with the factory for obtaining such a carriage immediately when required.

51. Medical Personnel — There shall be a whole time Medical Officer in every factory employing 250 persons or more.

52. Medical Examination — In a chrome process or in a nitro or amino process — (a) A Health Register containing the names of all persons employed in the process shall be kept in a form approved by the Chief Inspector-cum-facilitator;

(b) No person shall be newly employed for more than 14 days without a certificate of fitness granted after examination by the Surgeon, by a signed entry in the Health Register;

(c) Every person employed in the process shall be examined by the Medical Officer once in each calendar month (or at such other intervals as may be prescribed in writing by the Chief Inspector-cum-facilitator) on a date/dates of which due notice shall be given to all concerned;

(d) Every person so employed shall present himself at the appointed time for examination by the Medical Officer as provided in (b) and (c) of this rule;

(e) The Medical Officer shall have power of suspension as regards to all persons employed and no person after suspension shall be employed without written sanction from the **Medical officer** and entered in the Health Register.

53. Duties of Workers — Every person employed shall — (a) report to his foreman any defect in any fencing, breathing apparatus, appliance or other requisite provided in pursuance of these rules, as soon as he becomes aware of such defect;

(b) use the articles, appliances or accommodation required by these rules for the purpose for which they are provided;

(c) wear the breathing apparatus and life-belt where required under Rule 36 (a) and (b).

54. No person shall — (a) remove any fencing provided in pursuance of Rule 43 unless duly authorised; or (b) stand on the edge or on the side of any vessel to which Rule 43 applies;

- (c) pass or attempt to pass any barrier erected in pursuance of Rule 43;
- (d) place across or inside any vessel to which Rule 43 applies any plank or gangway which does not comply with that Regulation or make use of any such plank or gangway while in such position;
- (e) take a naked light or any lamp or matches or any apparatus for producing a naked light or spark into, or smoke in any part of the works where there is liability to explosion from inflammable gas, vapour or dust;
- (f) use a metal spade, scraper or pail when cleaning out or removing the residues from any chamber, still, tank or other vessel which has contained sulphuric acid or hydrochloric acid or other substances, which may cause evolution of arseniuretted hydrogen;
- (g) remove from a First Aid Box cupboard or from the Ambulance Room any First Aid appliance or dressing except for the treatment of injuries in the work.

SCHEDULE VI(K(i))

"Chemical Works" means any work or part of a work in which — 1. the manufacture or recovery of any of the following is carried on —

- (a) Carbonates, chromates, chlorates, oxides or hydroxides of potassium, sodium, iron, aluminium, cobalt, nickel, arsenic antimony, zinc or magnesium;
 - (b) Ammonia and the hydroxide and salts of ammonium;
 - (c) Sulphurous, sulphuric, nitric, hydrochloric, hydrofluoric, hydriodic, hydrosulphuric, boric, phosphoric, oxalic, arsenious, arsenic, lactic, acetic, tartaric or citric acids and their metallic or organic salts; and
 - (d) Cyanogen compounds.
2. a wet process is carried on — (a) for the extraction of metal from ore or from any by-product or residual material; or
(b) in which electrical energy is used in any process of chemical manufacture.
3. Alkali waste or the drainage therefrom is subject to any chemical process for the recovery of sulphur, or for the utilisation of any constituent of such waste or drainage.
4. Carbon bisulphide is made or hydrogen sulphide is evolved by the decomposition of metallic sulphides or hydrogen sulphide is used in the production of such sulphides.
5. Bleaching powder is manufactured or chlorine gas is made or is used in any process of chemical manufacture.
- 6.(a) Gas-tar or coal-tar or any compound product or residue of such tars is distilled or is used in any process of chemical manufacture;
(b) synthetic colouring matters or their intermediates are made.
7. Refining of crude shale oil or any process incidental thereto is carried out.
8. Nitric acid is used in the manufacture of nitro-compounds.
9. Explosives are made with the use of nitro-compounds.

SCHEDULE-VI(K(ii))

1. A nitro or amino process (overalls or suits working clothes and protective footwear).
2. Grinding raw materials in a chrome process (overall suits).
3. The crystal department and in packing in a chrome process (protective coverings).
4. Packing in a chrome process (respirators).
5. Any room or place in which chlorate is crystallised, ground or packed (clothing of woollen material and boots or overshoes, the soles of which have no metal on them).
6. Any room in which caustic is ground or crushed by machinery (goggles and gloves or other suitable protection for the eyes and hands.)
7. Bleaching powder chambers, or in packing charges drawn from such chambers (suitable respirators).
8. Drawing off of molten sulphur from sulphur pots in the process of carbon disulphide manufacture (overalls, face-shields, gloves and footwear of fireproof material).

SCHEDULE VI(K(iii))

1. A nitro or amina process.
2. The crystal department and the packing room in a chrome process.
3. The process of distilling gas or coal tar (other than blast furnace tar) and any process of chemical manufacture in which such tar is used.

SCHEDULE VI(K(iv))

- (i) A glazed sink with hot and cold water always available;
- (ii) A table with a smooth top;
- (iii) Means for sterilizing instruments;
- (iv) A couch;
- (v) A stretcher;
- (vi) Two buckets or containers with close fitting lids.
- (vii) Two rubber hot water bags;
- (viii) A kettle and spirit stove or other suitable means of boiling water;
- (ix) Twelve plain wooden splints, 36// × 4// × ¼//
- (x) Twelve plain wooden splints, 14// × 3// × 1 / 4 //
- (xi) Six plain wooden splints 10// × 2// × 1 / 2 //
- (xii) Three woollen blankets;
- (xiii) One pair artery forceps;
- (xiv) One bottle of brandy;
- (xv) Two medium size sponges;
- (xvi) Three hands towels;
- (xvii) Two kidney trays;

- (xviii) Four carbolic soaps
- (xix) Two glass tumblers and two wine glasses;
- (xx) Two clinical thermometers;
- (xxi) Graduated measuring glass with teaspoon;
- (xxii) One eye bath;
- (xxiii) One bottle (2 lbs.) carbolic lotion 1 in 20;
- (xxiv) Two chairs;
- (xxv) One screen;
- (xxvi) One electric hand torch;
- (xxvii) An adequate supply of anti-tetanus serum;
- (xxviii) Two first aid boxes, each containing
 - (a) 24 small sterilized dressings,
 - (b) 12 medium size sterilized dressings,
 - (c) 12 large size sterilized dressings,
 - (d) 12 large size sterilized burn dressings,
 - (e) 12 half ounce packets sterilized cotton wool,
 - (f) one snake bite lancet,
 - (g) one pair scissors,
 - (h) two (1 oz.) bottles of potassium permanganate crystals,
 - (i) one (4 oz.) bottle containing a two percent alcoholic solution of iodine,
 - (j) one (4 oz.) bottle of salvolatile having the dose and mode of administration indicated on the label,
 - (k) 1 copy of the first aid leaflet issued by the Chief Advisor, Factories, Government of India

PART II APPLYING TO WORKS OR PARTS THERE OF IN WHICH

I. Caustic pots are used; or

II. Chlorate or bleaching powder is manufactured; or

III. (a) Gas tar or coal tar is distilled or is used in any process of Chemical manufacture; or

(b) Anitrooramino process is carried on; or

(c) Achrome process is carried on; or

IV. Crudes shale oil is refined or processes incidental the retoare carried on; or

V. Nitric acid is used in the manufacture of nitrocom pounds; or

VI. The evaporation of brine in open pans and the stoving of salt are carried on; or

VII. The manufacture or recovery of hydrofluoric acid or any of its salts is carried on; and

VIII. Work at a furnace where the treatment of zinc ores is carried on.

1. Entry of Gas Tar or Coal Tar Still — Before any person enters a gas tar or coal tar still for any purpose except that of rescue, it shall be completely isolated from adjoining tar stills, either by disconnecting — (a) The pipe leading from the swan neck to the condenser worm; or

(b) The waste gas pipe fixed to the worm and or receiver; and in addition, blank flanges shall be inserted between the disconnected parts, and the pitch discharge pipe or cock at the bottom of the still shall be disconnected.

2. Entry into Bleaching Powder Chambers— No person shall enter a chamber for the purpose of withdrawing the charge of bleaching powder unless and until (i) The

chamber is efficiently ventilated; and (ii) The air in the chamber has been tested and found to contain not more than 2.5 grains of free chlorine gas per cubic foot. A register containing details of all such tests shall be kept in a form approved by the Chief Inspector-cum-facilitator.

3. Special Precautions for Nitro and Amino Process—In anitrooramino process—

- (a) If crystallised substance are broken or any liquor agitated by hand means shall be taken to prevent, as far as practicable, the escape of dust or fume into the air of any place in which any person is employed. The handles of all implements used in the operations shall be cleansed daily;
- (b) Cartridges shall not be filled by hand except by means of a suitable scoop;
- (c) 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 in to any workroom;
- (d) No person shall enter a stove to remove the contents until a free current of air has been passed through it;
- (e) Every vessel containing nitro or amino derivatives of phenol or of benzene or its homologues shall, if steam is passed into or around it, or if the temperature of the contents be at or above the temperature of boiling water, be covered in such a way that steam or vapour shall be discharged into the open air at a height of not less than 25 feet from the ground or the working platform, and at a point where it cannot be blown back again in to the work room.

4. Precautions During Caustic Grinding, Etc. — (a) Every machine used for grinding or crushing caustic shall be closed; and

(b) Where any of the following processes are carried on—

- (i) Grinding or crushing of caustic;
- (ii) Packing of ground caustic;
- (iii) Grinding, sieving, evaporating or packing in a chrome process; and
- (iv) Crushing, grinding or mixing of material or cartridge filling in anitrooramino process; an efficient exhaust draught shall be provided.

5. Chlorate manufacture—(a) Chlorate shall not be crystallised, ground or packed except in a room or place not used for any other purpose, the floor of which room or place shall be of cement or other smooth, impervious and incombustible material, and shall be thoroughly cleansed daily;

(b) Wooden vessel shall not be used for the crystallisation of chlorate, or to contain crystallised or ground chlorate; provided that this regulation shall not prohibit the packing of chlorate for sale in to wooden casks or other wooden vessels.

6. Restrictions on the employment of young persons and women — (a) Persons under 18 years of age and women shall not be employed in any process in which hydrofluoric acid fumes or ammoniacal vapours are given off or in any of the following operations—

- (i) Evaporation of brine in open pans;
- (ii) Stoving of salt;

- (iii) Work at a furnace where the treatment of zinc ores is carried on;
 - (iv) The cleaning of work rooms where the process mentioned in (iii) is carried on.
- (b) No person under 18 years of age shall be employed in a chrome process or in anitro or amino process or in a process in which the following materials are used or where the vapour of such materials is given off; Carbonbisulphide, chloride of sulphur, benzene, carbontetrachloride, trichloroethylene, any carbon, chlorine compound, or any mixture containing any of such materials.
- 7. Duties of Employees—** Every person employed — (a) In a process to which Rule 33 apply shall wear the protective clothing, footwear, respirators, goggles or gloves provided under Rule 33 and shall deposit over all sorsuits or working clothing so provided, as well as clothing put off during working hours, in the place provided under Rule 34.
- (b) In processes to which rule 35 applies shall carefully wash the hands and face before par taking of any food or leaving the premises;
- (c) In any process to which Part II of these rules applies shall use protective appliances supplied in respect of any process in which he is engaged.

SCHEDULE VI(L)

[See rule 55]

PRINTING PRESSES AND TYPE FOUNDRIES AND CERTAIN LEAD PROCESSES CARRIED THEREIN

1. Exemption — Where the Chief Inspector-cum-facilitator is satisfied that all or any of the provisions of the Schedule are not necessary for the protection of persons employed he/she may by certificate in writing exempt any factory from all or any of such provisions subject to such conditions as he/she may specify therein. Such certificate may at any time be revoked by the Chief Inspector-cum-facilitator.
2. Definitions — In these regulations — “Lead material” means materials containing not less than five percent of lead;
- “Lead process” means — (a) the melting of lead or any lead material for casting and mechanical composing; and
- (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.
- “Efficient exhaust draught” means localised 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.

3. Exhaust Draught— None of the following processes 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 on or, unless carried on in electrically heated and thermostatically controlled 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.

4. Prohibition Relating to Women and Young Persons— No women or young person shall be employed or permitted to work in any lead process.

5. 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.

6. 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.

7. Floor of Work-Room — 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 cleaned throughout daily after being thoroughly damped with water at a time when no other work is being carried on at the place.

8. 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.

9. Washing Facilities — There shall be provided and maintained in a cleanly state and in good repair for the use of all person employed in a lead process—

(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 at least 60 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 60 Centimeters; or

(ii) at least 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 cleansing material.

10. Medical Examination—(a) Every person employed in lead process shall be examined by the Medical Officer within 14 days of his first employment in such processes and thereafter shall be examined by the Medical Officer at intervals of not more than 3 months, and a record of such examination shall be entered by the Medical Officer in the special certificate of fitness in **the prescribed format**;

FORMAT

Special certificate of fitness

(In respect of persons employed in operations involving use of lead compounds)

Serial No.....

Date.....

I hereby certify that I have personally examined.....son of.....residing at.....who is desirous of being employed as.....in the.....and that his age, as nearly as can be ascertained from my examination is..... years, and that he is, in my opinion fit for employment at work involving the use of lead compounds.

His descriptive marks are: Medical Officer Left thumb-impression of person examined:

(b) A Health Register containing names of all persons employed in any lead process shall be kept in **the prescribed format;**

FORMAT

Health Register

(In respect of persons employed in occupations declared to be dangerous operations under Section 87) Name of Certifying Surgeon :

- (a) Mr..... From..... To.....
- (b) Mr..... From..... To.....
- (c) Mr..... From..... To.....

Serial No.	Works No.	Name of worker	Sex	Age (birth day)	Date of employment on present work	Date of leaving or transfer to other works	Reason for leaving, transfer or discharge	Nature of job or occupation	Raw material or by-product handled	Dates of Medical Examination by Certifying Surgeon				If suspended from work, state period of suspension with detailed reason	Recertified fit to resume duty on (with signature of Certifying Surgeon)	If certificate of unfitness or suspension issued to worker	Signature with date of Certifying Surgeon
1	2	3	4	5	6	7	8	9	10	11				12	13	14	15

Note — (i) Column 8. Detailed summary of reasons for transfer or discharge should be stated.
 (i) Column 11. should be expressed as fit/unfit/suspended.

(c) No person after suspension shall be employed in a lead process without the written sanction from the Medical Officer, entered in the Health Register.

11. Food, Drinks, Etc., Prohibited in Work-Room — No food, drinks, 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 VI(M)
[See rule 55]

COMPRESSION OF OXYGEN AND HYDROGEN PRODUCED BY THE ELECTROLYSIS OF WATER

1. The room in which electrolyser plant is installed shall be separated 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 at hourly intervals at the following points — (i) In the electrolyser room;
(ii) At the gas holder in-let; and
(iii) at the suction end of the compressor. The purity figures shall be entered and signed by the person carrying out such tests in the register;
Provided, however, that if the electrolyser plant is fitted with automatic recorder of purity of oxygen and hydrogen with alarm lights, it shall be sufficient if the purity of the gases is tested at hourly intervals 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.
4. There shall be at least two gas holders for each kind of gas compressed and the gas holder for same gas shall be provided with suitable arrangements to ensure that no gas holder is connected to the compressor and to the electrolyser at the same time, and only one gas holder is connected to the compressor line at any one time.
5. The bell of any gas holder shall not be permitted to go within 30 c.m. (12 inches) of its lowest position when empty, and a visual and an audible warning signal shall be fitted to the gas holder to indicate that this limit is reached.
6. The water and caustic soda used for making electrolytes shall be chemically pure within pharmaceutical limits.
7. Electrical connections at the electrolyser cells and at the electric generator terminals shall be so constructed as to preclude 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.
8. Oxygen and hydrogen gas pipes shall be painted with distinguishing colours and in the event of leakage at the joints of the hydrogen gas pipe, the pipe after reconnection shall be purged of all air before drawing in hydrogen gas.
9. All electrical wiring and apparatus in the electrolyser 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, brazing, 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 operations no explosive substances shall be allowed to enter that part until the metal has cooled sufficiently to prevent risk of explosion.
11. No work or 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 person 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 Rule 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 VI(N)

[See rule 55]

MANUFACTURE, HANDLING AND USE OF BENZENE AND SUBSTANCES CONTAINING BENZENE.

1. Application :- This schedule shall apply in respect of 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 per cent 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 vapours to the working atmosphere ; and

(d) "efficient exhaust draught" means localised ventilation, effected by mechanical means for the removal of gases, vapours and dusts or fumes so as to prevent them from escaping into 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, vapours, fumes or dusts originate.

3. Prohibition and substitutions : (1) Use of Benzene and substances containing benzene, is prohibited in the following process :- (a) Manufacture of varnishes, paints and thinners ; and

(b) Cleaning and degreasing operations.

(2) 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.

(3) Where suitable substitutes are available, they shall be used instead of benzene or substances containing benzene. This provision, however shall not apply to the following process :-

(a) production of benzene ;

(b) process where benzene is used for chemical synthesis ; and

(c) motor spirits (used as fuel)

(4) The Chief Inspector-cum-facilitator may, subject to confirmation by the State Government, permit exemptions from the percentage laid down in sub-paragraph 2(a) and also from the provisions of sub-paragraph (3) of this paragraph temporarily under conditions and within limits of time to be determined after consultation with the employers and workers concerned.

4. Protection against inhalation.- (1) The process involving the use of benzene or substances containing benzene shall as far as practicable be carried out in an enclosed system.

(2) Where, however, it is not practicable to carry out the process in an enclosed system, the 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 vapours to prevent their escape into the air of the workroom so that the concentration of benzene in the air does not exceed 10 parts per million by volume or 30 milligrams per cubic meter.

(3) Air analysis for the measurement of concentration of benzene vapours in air shall be carried out every 8 hours or at such intervals as may be directed by the Chief Inspector 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 vapours in air as measured by air analysis, exceeds 10 parts per million by volume or 30 milligrams per cubic meter, the Manager shall forthwith report the concentration to the Chief Inspector stating the reasons for such increase.

(4) 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 subparagraph (2) shall be provided with suitable respirator or face masks. The duration of such exposure shall be limited as far as possible.

5. Measures against skin contact - (1) 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 materials not effected by benzene or its vapours.

(2) The protective wear referred to in sub-paragraph (1) shall be maintained in good condition and inspected regularly.

6. Prohibition relating to employment of women and young persons. No women or young person shall be employed or permitted to work in any workroom involving exposure to benzene or substances containing benzene.

7. Labelling :- Every container holding benzene or substances 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 toxicity and warning about inflammability of the chemical.

8. Improper use of benzene:- (1) The use of benzene or substances containing benzene by workers for cleaning their hands or their work clothing shall be prohibited. (2) Workers shall be instructed on the possible dangers arising from such misuse.

9. Prohibition of consuming food, etc. in workroom:- 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.

10. Instructions as regards risks:- Every workers 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.

11. Cautionary notices:- Cautionary notices in the form specified in appendix and printed 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.

12. Washing facilities, cloakroom and messroom :- In factories in which benzene or substances containing benzene are manufactured, handled or used, the occupier shall provide and maintain in a clean state and in good repair - (a) Washing facilities under cover, of the standard of at least 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 ;

(b) A cloakroom with lockers for each worker, having two compartments one for street-clothing and one for work-clothing; and

(c) a messroom 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 messroom shall be dispensed with.

13. Medical examination:- (1) Every worker who is to be employed in processes involving use of benzene or substances containing benzene, shall undergo. (a) a thorough pre-employment medical examination including a blood test for fitness for employment by a **Medical officer**; and

(b) periodical medical examination including blood test and other biological tests at intervals of every 6 months by the factory medical officer with the assistance of a laboratory.

(2) Certificates of pre-employment medical examination and periodical medical examination including test shall be entered in a health register in **the prescribed format**, which shall be produced on demand by an Inspector. (3) (a) If the factory medical officer on examination at any time is of the opinion that any worker has developed signs symptoms of benzene exposure, he shall make a record of his findings in the said register and inform the manager in writings.

FORMAT
Health Register

(In respect of persons employed in occupations declared to be dangerous operations under Section 87) Name of Certifying Surgeon :

(a) Mr..... From..... To.....

(b) Mr..... From..... To.....

(c) Mr..... From..... To.....

Serial No.	Works No.	Name of worker	Sex	Age (birth day)	Date of employment on present work	Date of leaving or transfer to other works	Reason for leaving, transfer or discharge	Nature of job or occupation	Raw material or by-product handled	Dates of Medical Examination by Certifying Surgeon					If suspended from work, state period of suspension with detailed reason	Recertified fit to resume duty on (with signature of Certifying Surgeon)	If certificate of unfitness or suspension issued to worker	Signature with date of Certifying Surgeon
1	2	3	4	5	6	7	8	9	10	11					12	13	14	15

Note — (i) Column 8. Detailed summary of reasons for transfer or discharge should be stated
(i) Column 11. should be expressed as fit/unfit/suspended.

(b) on receipt of the information from the factory medical officer, the manager of the factory shall sent the worker so found exposed, to the Medical Officer who shall, after satisfying himself with the findings of the factory medical officer and conducting necessary examinations, issue orders of temporary shifting of the worker or suspension of the worker in the process.

(4) The medical examination shall be arranged by the occupier or manager of the factory and the worker so examined shall not bear any expenses for it.

APPENDIX

CAUTIONARY NOTICE BENZENE AND SUBSTANCES CONTAINING BENZENE

1. Hazards: (a) Benzene and substances containing benzene are harmful.
- (b) Prolonged or repeated breathing of benzene vapours may result in acute or chronic poisoning.
- (c) Benzene can also be absorbed through skin which may cause skin and other diseases.
2. Preventive measures: (a) Avoid breathing of benzene vapours. (b) Avoid prolonged or repeated contact of benzene with the skin. (c) Remove benzene soaked or wet clothing promptly.
- (d) If any time you are exposed to high concentration of benzene vapours and exhibit signs and symptoms such as dizziness, difficulty in breathing, excessive excitation and losing of consciousness, immediately inform your factory manager.

(e) Keep all the containers of benzene closed.

(f) Handle, use and process benzene and substances containing benzene carefully in order to prevent their spillage on floor.

(g) Maintain good housekeeping.

3. Protective equipment: (a) Use respiratory protective equipment in places where benzene vapours are present in high concentration.

(b) In emergency, use self generating oxygen mask or oxygen or air cylinder masks.

(c) Wear hand gloves, aprons, goggles and gum boots to avoid contact of benzene with your skin and body parts.

4. First aid measures in case of acute benzene poisoning : (a) Remove the clothing immediately if it is wetted with benzene.

(b) If liquid benzene enters eyes, flush thoroughly for at least 15 minutes with clean running water and immediately secure medical attention.

(c) In case of unusual exposure to benzene vapour, call a physician immediately. Until he arrives, do the following :-

(i) If the exposed person is conscious - (aa) Move him to fresh air in open. (bb) Lay down without a pillow and keep him quiet and warm.

(ii) If the exposed persons is unconscious - (aa) Lay him down preferably on the left side with the head low. (bb) Remove any false teeth, chewing-gum, tobacco or other foreign objects which may be in his mouth. (cc) Provide him artificial respiration in case difficulty is-being experienced in breathing. (dd) In case of shallow breathing or cyanosis (blueness of skin, lips, ears, finger nail beds), he/she should provided with medical oxygen or oxygen carbon dioxide mixture. If needed, he/she should be given artificial respiration. Oxygen should be administered by a trained person only.

SCHEDULE VI(O)
[See rule 55]

**PROCESS OF EXTRACTING OILS AND FATS FROM VEGETABLES AND ANIMAL SOURCES
IN SOLVENT EXTRACTION PLANTS**

1. Definitions :- For the purposes of this Schedule :-

(a) "Solvent extraction plant" means a plant in which the process of extracting oil and fats from vegetable and animal sources by use of solvents is carried on.

(b) "Solvent" means an inflammable liquid such as pentane, hexane and heptanes used for the recovery of vegetable oil.

(c) "flameproof enclosure" as applied to electrical machinery or apparatus means an enclosure that will with-stand when covers or other access doors are properly secured an internal explosion of the flammable gas or vapour which may enter or which may originate inside the enclosure without suffering damage and without communicating internal inflammation or explosion to the external flammable gas or vapour.

(d) "competent person" for the purpose of this schedule shall be at least a member of the Institution of Engineers (India) or an Associate Member of the said Institution with 10 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 specialised knowledge of oil and fats and with a minimum experience of 5 years in a solvent extraction plant shall also be considered to be competent person :

Provided further that the State Government may accept any other qualifications if in its opinion they are equivalent to the qualifications aforesaid.

2. Location and layout:- (1) No solvent extraction plant will be permitted to be constructed or extended within a distance of 30 meter from the nearest residential locality.

(2) A 1.5 metre high continuous wire fencing shall be provided around the solvent extraction plant up to a minimum distance of 1.5 metres from the plant.

(3) No person shall be allowed to carry any matches or an open flame or fire inside the areas bound by the fencing.

(4) Boiler houses and other buildings where open flame processes are carried on shall be located at least 30 meters away from the solvent extraction plant.

(5) If godown or preparatory processes are at a distance of less than 30 meters from the solvent extraction plant there shall be at least 15 metres distance from the plant and a continous barrier wall of noncombustible material 1.5 metres high shall be erected at a distance of not less than 15 metres from the solvent extraction plant so that it extends to at least 30 metres of vapourtraval around its ends from the plant to the possible source of ignition.

3. Electrical Installations : (1) All electrical motors and wiring and other electrical equipment installed for house in solvent extraction plant shall be of flameproof construction.

(2) All metal parts of the plant and building including various tanks and containers where solvents are stored or are present and all parts of electrical equipments not required to be energized shall be properly bonded together and 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 15 metres distance from solvent extraction plant. For this purpose, "No smoking" signs shall be permanently displayed in the area.

5. Precautions against friction :- (1) All tools and equipment including ladders, chains and other lifting tackle required to be used in solvent extraction plant shall be of non-sparking type.

(2) No machinery or equipment in solvent extraction plant shall be belt driven.

(3) No person shall be allowed to enter and work in the solvent extraction plant if wearing clothes made of nylon or such other fibre that can generate static electrical charge or wearing footwear which is likely to cause sparks by friction.

6. Fire fighting apparatus :- (1) Adequate number of portable fire extinguishers suitable for use against flammable liquid fires shall be provided in the solvent extraction plant.

(2) An automatic water spray sprinkler system on a wet pipe or open head deluge system with sufficient supply of storage water shall be provided over 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 over head water supply for feeding water by gravity to condensers which shall come into play automatically with the power failure.

8. Magnetic separators:- Oil cake shall be fed to the extractor by conveyer through a hopper and magnetic separator shall be provided to remove any pieces of iron during its transfer.

9. Venting:- (1) Tanks containing solvents shall be protected with emergency venting to relieve excessive internal pressure in the event of fire.

(2) All emergency relief vents shall terminate at least 6 metres above the ground and be so located that vapours will not re-enter the building in which 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 not closer than 8 metres 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 at least six air changes per hour.

12. House keeping :- (1) Solvents shall not be stored in an area covered by solvent extraction plant except in small quantities which shall be stored in approved safety cans

(2) Waste, materials such as oily rags, other wastes and absorbents used to wipe off solvent and paints and oil shall be deposited in approved containers and removed from the premises at least once a day.

(3) Space within the solvent extraction plant and within 15 metres from the plant shall be kept free from combustible materials and any spills of oil or solvent shall be cleaned up immediately.

13. Examination and Repairs :- (1) 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 with his observation as to whether or not the plant is in safe condition to work.

(2) No repairs shall be carried out to the machinery or plant except under the direct supervision of the competent person.

(3) 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. Employment of women and young persons:- No women or young person's shall be employed in the solvent extraction plant.

16. Vapour detection :- Suitable type of flameproof 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 VI(P)

[See rule 55]

MANIPULATION OF STONE OR ANY OTHER MATERIAL CONTAINING FREE SILICA

1. Application — This Schedule shall be applied to all factories or parts of factories in which manipulation of stone or any other material containing free silica is carried on.

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% by weight of free silica.

3. Precautions in manipulation — No manipulation shall be carried out in a factory or part of a factory unless one or more of the following measures, namely —

(a) damping the stone or other material being processed;

(b) providing water spray;

(c) enclosing the process;

(d) isolating the process; and

(e) providing localised exhaust ventilation; are adopted so as to effectively control the dust in any place in the factory where any person is employed, at a level equal to or below the maximum permissible level for silica dust as laid down in **Table - 2 appended to Rule - 128 of Model Rule.**

Provided that such measures as above are not necessary if the process or operation itself is such that the level of dust created and prevailing does not exceed permissible level referred

4. Maintenance of Floors— (1) All floors or places where fine dust is likely to settle on and where on 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 air borne in the process of cleaning.

(2) The surface of every floor of every work room or place where any work is carried on or where any person has to pass during the course of his work shall be cleaned of dust once at least during each shift after being sprayed with water or by any other suitable method so as to prevent dust being airborne in the process of cleaning.

5. Prohibition relating to young persons — No young person shall be employed or permitted to work in any of the operations involving manipulation or at any place where such operations are carried out.

6. 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 officer for medical surveillance of the workers employed therein whose employment shall be subject to the approval of the Chief Inspector of Factories and

(b) Provide to the said medical officer all the necessary facilities for the purpose referred to in clause (1). (2) The record of medical examination and appropriate tests carried out by the said medical officer shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

7. Medical examination by **Medical officer** — (1) Every worker employed in the processes specified in paragraph 1 shall be examined by a **Medical officer** within 15 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 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** at least once in every twelve 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 3 years.

(3) The **Medical officer** after examining a worker, shall issue a Certificate of Fitness in **the prescribed format (I) hereinbelow**. The record of re-examinations carried out shall be entered in the certificate and the certificate shall be kept in the custody of the Manager 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 **the prescribed format(II) hereinbelow**.

FORMAT(I)
Certificate of Fitness

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 any examination, is years, and that he is, in
my opinion, fit/unfit for employment in the above mentioned factory as mentioned above.
2. He may be produced for further examination after a period of
3. The serial number of the previous certificate is

Signature or left hand thumb impression
of person examined

Signature of Medical Officer

Date:

1	2	3	4
I certify that I have examined the persons 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 Medical Officer.

FORMAT (II)
Health Register

(In respect of persons employed in occupations declared to be dangerous operations under Section 87) Name of Certifying Surgeon :

- (a) Mr..... From..... To
- (b) Mr..... From..... To
- (c) Mr..... From..... To

Serial No.	Works No.	Name of worker	Sex	Age (birth day)	Date of employment on present work	Date of leaving or transfer to other works	Reason for leaving, transfer or discharge	Nature of job or occupation	Raw material or by-product handled	Dates of Medical Examination by Certifying Surgeon					If suspended from work, state period of suspension with detailed reason	Recertified fit to resume duty on (with signature of Certifying Surgeon)	If certificate of unfitness or suspension issued to worker	Signature with date of Certifying Surgeon
1	2	3	4	5	6	7	8	9	10	11					12	13	14	15

Note — (i) Column 8, Detailed summary of reasons for transfer or discharge should be stated
(ii) Column 11, should be expressed as fit/unfit/suspended.

(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/She 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.

(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.

8. Exemptions— If in respect of any factory, the Chief Inspector-cum-facilitator is satisfied that owing to the exceptional circumstances or in-frequency of the processes or for any other reason, all or any of the provisions of this schedule is not necessary for protection of the workers in the factory, the Chief Inspector-cum-facilitator may by a certificate in writing, which he/she may in his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any, as he/she may specify therein.

SCHEDULE VI(Q)**[See rule 55]****HANDLING AND PROCESSING OF ASBESTOS, MANUFACTURE OF ANY ARTICLE OF ASBESTOS, AND ANY OTHER PROCESS OF MANUFACTURE OR OTHERWISE IN WHICH ASBESTOS IS USED IN ANY FORM**

1. Application — This Schedule shall apply to all factories or parts of factories in which any of the following processes is carried on —

- (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 process 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 insulating mattresses, composed wholly or partly of asbestos, processes incidental thereto;
- (e) manufacture of asbestos cardboard and paper;
- (f) manufacture of asbestos cement goods;
- (g) application of asbestos by spray method;
- (h) sawing, grinding, turning, abrading and polishing in dry state of articles composed wholly or partly of asbestos;
- (i) cleaning of any room, vessel, chamber, fixture or appliance for the collection of asbestos dust; and
- (j) any other processes in which asbestos dust is given off into the work environment.

2. Definition— For the purpose of this Schedule — (a) "asbestos" means any fibrous silicate mineral and any admixture containing actinolite, amosite, anthophyllite, dthrysotile, crocidolite, tremolite or any mixture thereof, whether crushed or opened;

(b) "asbestos textiles" means yarn or cloth composed of asbestos or asbestos mixed with any other material;

(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 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 crashing, disintegrating, and any other processes in or incidental to the opening of asbestos;

(g) "protective clothing" means overalls and head covering which (in either case) will when worn exclude asbestos dust.

3. Tools and Equipment— (1) 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.

4. Exhaust draught— (1) An efficient exhaust draught shall be provided and maintained to control dust from the following processes and machines-

(a) manufacture and conveying machinery namely —

(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; and

(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 loose asbestos is delivered or passes;

(d) work-benches for asbestos waste sorting or for other manipulation of 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 in-to 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 work place.

(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.

(5) 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 examined and inspected once in 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 or test shall be rectified forthwith.

(2) A register containing particulars of such examination and testes, and the state of the plant and the repairs or alteration (if any) found to be necessary shall be kept and shall be available for inspection by an Inspector.

6. Segregation in case of certain process-mixing or blending by the hand of asbestos, or making or repairing of insulating mattresses composed wholly or partly of asbestos shall not be carried on in any room in which any other work is done.

7. Storage and distribution of loose asbestos— (1) All loose asbestos shall while not in use, be kept in suitable closed receptacles which prevent the escape of asbestos dust therefrom; such asbestos shall not be distributed within a factory except in such receptacles or in a totally enclosed system of conveyance.

8. All Asbestos sacks — (1) 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 3.

9. 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-para (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 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.

10. Breathing Apparatus and protective clothing— (1) An approved breathing apparatus and protective clothing shall be provided 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 doffer cylinders, or other parts of a carding machine by means of hand strikes,

(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 rule and for the storage of such apparatus and clothing when not in use.

(3) All breathing apparatus and protective clothing when not in use shall be stored in the accommodation provided in accordance with sub-paragraph 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 protecting 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) 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.

(7) No person shall be employed to perform any work specified in subparagraph (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.

11. Separate accommodation for personal clothing — A separate accommodation shall be provided in a conveniently accessible position for all person employed in operations to which this Schedule applied for storing of personal clothing. This should be separated from the accommodation provided under sub-paragraph (2) of paragraph (10) to prevent contamination of personal clothing.

12. 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 15 persons employed.

(2) The washing places shall have standpipes 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.

(5) Sufficient supply of soap and nail brushes shall be provided.

13. Messroom— (1) There shall be provided and maintained for use of all workers employed in the factory covered by this Schedule, remaining on the premises during the rest intervals, a suitable messroom which shall be furnished with—

(a) sufficient tables and benches with back rest, and

(b) adequate means for warming food.

(2) The messroom shall be placed under the charge of a responsible person and shall be kept clean.

14. Prohibition of employment of young persons— No young person shall be employed in any of the process covered by this Schedule.

15. Prohibition relating to smoking — No person shall smoke in any area where processes covered by this Schedule are carried on. A notice in the language understood by majority of the workers shall be pasted in the plant prohibiting smoking at such areas.

16. Cautionary Notices— (1) Cautionary notices shall be displayed at the approaches and along the perimeter of every asbestos processing area to warn all persons regarding —(a) hazards to health from asbestos dust;

(b) need to use appropriate protective equipment;

(c) prohibition of entry to unauthorized persons, or authorized persons but without protective equipment. (2) Such notices shall be in the language understood by the majority of the workers.

17. Air Monitoring — To ensure the effectiveness of the Control measures, monitoring of asbestos fibre in air shall be carried out once at least in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purpose.

18. Medical facilities and records of medical examinations and tests— (1) The occupier of every factory or part of the factory to which the Schedule applies, shall —

(a) employ qualified medical practitioner for medical surveillance of the workers covered by this Schedule 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 a separate register approved by the Chief Inspector-cum-facilitators, which shall be kept readily available for inspection by the Inspector-cum-facilitators.

19. Medical examination by **Medical officers** — (1) every worker employed in the processes specified in paragraph 1 shall be examined by a **Medical officer** within 15 days of his first employment. Such examination shall include pulmonary function tests, tests for detecting asbestos fibres in sputum and chest X-ray. 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 process referred to sub-paragraph (1) shall be re-examined by a **Medical officer** at least once in every twelve calendar months. Such examinations shall wherever the **Medical officer** considers appropriate include all the tests specified in sub-paragraph (1) except chest Xray which will be carried out once in 3 years.

(3) The **Medical officer** after examining a worker shall issue a certificate of Fitness in **the prescribed format(I) hereinbelow**. The record of examination and re-examination carried out shall be entered in the certificate and the certificate shall be kept in the custody of the manager 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 **the prescribed format(II) hereinbelow**.

FORMAT(I)
Certificate of Fitness

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 any examination, is years, and that he is, in my opinion, fit/unfit for employment in the above mentioned factory as mentioned above.

2. He may be produced for further examination after a period of

3. The serial number of the previous certificate is

Signature or left hand thumb impression of person examined

Signature of Medical Officer

Date:

1	2	3	4
I certify that I have examined the persons 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 Medical Officer.

FORMAT(II)
Health Register

(In respect of persons employed in occupations declared to be dangerous operations under Section 87) Name of Certifying Surgeon :

- | | | |
|-------------|-----------|----------|
| (a) Mr..... | From..... | To |
| (b) Mr..... | From..... | To |
| (c) Mr..... | From..... | To |

Serial No.	Works No.	Name of worker	Sex	Age (birth day)	Date of employment on present work	Date of leaving or transfer to other works	Reason for leaving, transfer or discharge	Nature of job or occupation	Raw material or by-product handled	Dates of Medical Examination by Certifying Surgeon					If suspended from work, state period of suspension with detailed reason	Recertified fit to resume duty on (with signature of Certifying Surgeon)	If certificate of unfitness or suspension issued to worker	Signature with date of Certifying Surgeon
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15				

Note — (i) Column 8. Detailed summary of reasons for transfer or discharge should be stated
(i) Column 11. should be expressed as fit/unfit/suspended.

(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/She shall make a record of his finding 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.

(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 examination, again certifies him fit for employment in those processes.

20. Exemptions — If in respect of any factory, 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 provisions of this Schedule, is not necessary for protection of the workers in the factory, the Chief Inspector-cum-facilitator may by a certificate in writing, which he/she 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/she may specify there in.

SCHEDULE VI(R)

[See rule 55]

HANDLING OR MANIPULATION OF CORROSIVE SUBSTANCES

1. Definitions — For the purposes of this Schedule — (a) "corrosive operation" means an operation of manufacturing, storing, handling, processing, packing or using any corrosive substance in a factory; and (b) "corrosive substance" includes sulphuric acid, nitric acid, hydrochloric 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 a corrosive substance.

2. Flooring — The floor of every workroom of a factory in which corrosive operation is carried on shall be made of impervious, corrosion and fire resistant 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 on a sound condition.

3. Protective equipment— (1) 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.

(2) The protective equipment and preparations provide shall be used by the persons employed in any corrosive operation.

4. Water facilities — Where any corrosive operation is carried on, there shall be provided as close to the place of such operations as possible a source of clean water at a height of 210 centimeters from a pipe of 1.25 centimeters 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 a minimum length, breadth and height of 210 centimeters, 120 centimeters and 60 centimeters respectively or such dimensions as are approved by the Chief Inspector-cum-facilitator shall be provided as the source of clean water.

5. Cautionary notice — A cautionary notice in the following form and printed in the language which majority of the workers employed understand, shall be displayed prominently close to the place where a corrosive operations is carried out and where it can be easily and conveniently read by the workers. If any worker is illiterate effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

**CAUTIONARY
NOTICEDANGER**

Corrosive substances cause severe burns and vapours there of may be extremely hazardous. In case of contact, immediately flood the part affected with plenty of water for at least 15 minutes.

GETMEDICAL ATTENTION QUICKLY

1. Transport— (1) Corrosive substances shall not be filled, moved or carried except in containers and when they are to be transported they shall be placed in crates of sound construction and of sufficient strength. (2) A container with a capacity of 11.5 litres or more of a corrosive substance shall be placed in a 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.

(2) Containers for corrosive substances shall be plainly labelled.

2. Devices for handling corrosives— (1) Suitable tilting or lifting device shall be used for emptying Jars, carboys and other containers of corrosives.

(2) Corrosive substance shall not be handled by bareh and sbut by means of a suitable scoop or other device.

3. 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 the purpose.

4. Cleaning tanks, stills etc.— (1) 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 arseniureted hydrogen (arsine).

(2) 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 as outlined below are required to be undertaken to ensure the worker's safety-

(a) 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.

(b) No person shall be required or allowed to enter any confined space as is referred to in sub-paragraph 2 (a), 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—

(i) 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

(ii) 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.

(3) 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.

5. Storage— (1) Corrosive substance 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 gases.

(2) Pumping or filling overhead tanks, receptacles, vats or other containers for storing corrosive substance shall be so arranged that there is no possibility of any corrosive substance over flowing and causing injury to any person.

(3) Every container having a capacity of twenty liters or more and every pipeline, valve, and fitting used for storing or carrying corrosive substance shall be thoroughly examined every year for finding out any defect and defects so found out shall be removed forth with. A register shall be maintained of every such examination made and shall be produced before the Inspector-cum-facilitator whenever required.

6. Fire extinguishers and firefighting 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 extinguishers or other equipment.

7. Exemption—If in respect of any factory on an application made by the manager, the Chief Inspector-cum-facilitator is satisfied that owing to the exceptional circumstances, or the infrequency of the process or for any other reason to be recorded by him in writing, all or any of the provisions of this Schedule are not necessary for the protection of the persons employed therein, he/she may by a certificate in writing, which he/she may at any time revoke, exempt the factory from such of the provisions and subject to such condition as he/she may specify there in.

SCHEDULE VI(S)
[See rule 55]

MANUFACTURE OR MANIPULATION OF MANGANESE AND ITS COMPOUNDS

1. Application — This Schedule shall apply to every factory in which or in any part of which any manganese process is carried on.
2. Definition — For the purposes of this Schedule — (a) “manganese process” means processing, manufacture or manipulation of manganese or any compound of manganese 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 ore or any mixture containing manganese; and
(d) “efficient exhaust ventilation” means localized ventilation effected by mechanical means for the removal of dust or fume, 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 workplace.
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 processes and other parts of the factory and persons employed on other processes 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 an efficient exhaust ventilation which shall be applied as near to the point of generations as practicable.
5. 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 work place 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.
6. Prohibition relating to women and young persons — No women or young persons shall be employed or permitted to work in any manganese process.

7. Food, drinks etc. prohibited in the work rooms — No food, drink, pan and supari or tobacco shall be allowed to be brought into or consumed by any worker in any workroom in which any manganese process is carried on.

8. Messroom — There shall be provided and maintained for the use of the persons employed in a manganese process a suitable messroom which shall be furnished with sufficient tables and benches and adequate means for warming of food. The messroom shall be placed under the charge of a responsible person and shall be kept clean.

9. 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) 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 at least 60 centimeters for every ten such persons employed at any one time, and having a constant supply of water taps or jets above the trough at intervals of not more than 60 centimeters; or

(ii) at least one wash basin for every such persons employed at any one time, fitted with a waste pipe and plug having a constant supply of water; and

(b) sufficient supply of soap or other suitable cleaning material and nail brushes and clean towels.

10. Cloakroom — If the Chief Inspector so requires there shall be provided and maintained for the use of persons employed in manganese process a cloakroom for clothing put off during working hours with adequate arrangements for drying the clothing.

11. Cautionary placard and instructions— Cautionary notices in the form specified in appendix and printed in the language of the majority the workers employed shall be affixed in prominent places in the factory where they can be easily and conveniently read by the workers and arrangement 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.

12. Medical examination— (1) Every person employed in a manganese process shall be medically examined by Medical Officer within 14 days of his first employment and thereafter at intervals of not more than three months.

(2) If a person medically examined is found fit for employment on a manganese process the Medical Officer shall grant a certificate of fitness in **the prescribed format** which shall be kept in the custody of the manager of the factory. The certificate shall be readily produced by the manager whenever required by any Inspector, and the person granted such a certificate shall be provided with a token made of metal with the number of the certificate inscribed there on and the said person shall always carry the said token while at work.

(3) If a person is found unfit for work in any manganese process, the Medical Officer shall grant a certificate to that effect and such person shall not be allowed to work in any manganese process.

FORMAT
Certificate of Fitness

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 any examination, is years, and that he is, in
my opinion, fit/unfit for employment in the above mentioned factory as mentioned above.

2. He may be produced for further examination after a period of

3. The serial number of the previous certificate is

Signature or left hand thumb impression
of person examined

Signature of Medical Officer

Date:

1	2	3	4
I certify that I have examined the persons 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 Medical Officer.

(4) (a) If the Medical Officer finds that any worker who had been granted a certificate of fitness at a previous medical examination was no longer fit to be employed on any manganese process, he/she may revoke the previous certificate and no person whose certificate of fitness has been revoked shall be allowed to work on any manganese process;

(b) The Medical Officer may require such person to be produced before him for fresh medical examination after such period as he/she may specify in writing on the revoked certificate and in the health register.

(5) If the Medical Officer is of the opinion that a person had become permanently unfit for employment on any manganese process, He/She/she/she shall make an entry to that effect in the certificate and in the health register and no such person shall be allowed to work in any manganese process.

(6) If the Medical Officer is of the opinion that any special expert examination or test is necessary for a proper diagnosis in a doubtful case he/she may direct the manager and or the occupier to get the worker examined by such expert or to get such tests carried out as may be specified by him and the manager or the occupier as the case may be shall comply with the direction given within a specified time and the report of examination or test as the case may be brought before the Medical Officer

(7) If the Medical Officer is of the opinion that any person is not fit for employment in any manganese process but is fit to be employed on any other work he/she may advise the manager or the occupier to employ the said person on such other job as may be safe for him. The Medical Officer may also advise the worker to undergo such treatment as he/she may consider necessary.

(8) If any person has any doubt regarding the diagnosis or decision of the **Medical officer** he/she may make an appeal to the Chief Inspector-cum-facilitator and the Chief Inspector-cum-facilitator may refer the case to the Medical Inspector-cum-facilitator of Factories or to a Medical committee constituted by him for this purpose of which Medical Inspector-cum-facilitator of Factories shall be a member. The decision of the Medical Inspector-cum-facilitator or the committee as the case may be shall be final in the matter.

13. Exemption— If in respect of any factory, the Chief Inspector-cum-facilitator is satisfied that owing to any exceptional circumstances, or infrequency of the process, or for any other reason, application of all or any of the provisions of this Schedule is not necessary for the protection of the persons employed in such factory he/she may by an order in writing which he/she may at his discretion revoke, exempt such factory from all or any of the provisions on such conditions and for such period as he/she may specify in the said order.

APPENDIX
CAUTIONARY NOTICE
MANGANESE AND MANGANESE COMPOUNDS

1. Dust, fumes and mists of manganese and its 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 equipment provided.
6. When required to work in situations where dusts, fumes or mists are likely to be inhaled, use respiratory protective equipment provided for the purpose.
7. If you get severe headaches, prolonged sleeplessness or abnormal sensations on the body, report to the manager who would make arrangements for your examination and treatment.

SCHEDULE VI(T)
[See rule 55]

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 hereinafter 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 thereunder and any other product, 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 localised mechanical ventilation for removal of smoke, gas, vapour, dust, fume or mist so as to prevent them from escaping into the air of any work room 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 process;

(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

(e) “suspension” means suspension from employment in any process wherein a dangerous pesticide is manipulated, by written certificate in the health register in **the prescribed format** signed by the Medical Officer who shall be competent to suspend all persons employed in such process.