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राज्य सरकार तथा अन्य राज्य-प्राधिकारियों द्वारा जारी किये गये (सामान्य आदेशों, उप-विधियों आदि को सम्मिलित करते हुए) सामान्य कानूनी नियम।

LABOUR DEPARTMENT

NOTIFICATION

Jaipur, July 27, 1987

G. S. R. 18.—In exercise of powers conferred by section 112 of the Factories Act, 1948 (Central Act 63 of 1948) the State Government hereby makes the following Rules further to amend the Rajasthan Factories Rules, 1951, the same having been previously published in Rajasthan Gazette part 3 (kh) dated 8 January, 1987 as required by section 115 of the said Act namely :

RULES

1. These rules may be called the Rajasthan Factories (Amendment) Rules, 1987.

In the said rules,

1. (i) In clause (d) of sub-rule (1) of Rule 58 after the word "means" and before the words "an unfired" the words "fired and" shall be added.

(ii) Clause (a), (d) and clause (h) of sub-rule (2) of rule 58, shall be deleted.

2. (i) In sub-rule (1) of Rule 100 after entry and schedule No. 23, the following new entries and schedule shall be inserted, namely:—

"Operations involving high noise levels.

25. Manufacture of Rayon by viscose process.

26. Highly flammable liquids and flammable compressed gases.”

Amendment of Rule 100:—

(i) In Rule 100 after sub-rule (3), the following sub-rule (4) and (5) shall be added namely:—

“(4) Notwithstanding the provision specified in the schedules annexed to this Rule, the Inspector may, by issue of orders in writing to the manager or occupier or both, direct them to carry out such measures, and within such time, as may be specified in such order with a view to removing conditions dangerous to the health of the workers, or to suspend any process, where such process constitutes, in the opinion of the Inspector, imminent, danger of poisoning of toxicity.”

(ii) “(5) Any register or record of medical examination and tests connection therewith required to be carried out under any of the schedules annexed hereto in respect of any workers shall be kept readily available to the inspector & shall be preserved till the expiry of one year after the workers ceases to be in employment of the factory.”

(b) In rule 100, for the existing Schedule XVt the following schedule shall be substituted, namely:—

“SCHEDULE XV

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 processes in the manufacture of asbestos textiles including preparatory and finishing processes;
 - (c) making of insulation slabs or sections, composed wholly or partly of asbestos, and processes incidental thereto;
 - (d) making or repairing of insulating mattresses, composed wholly or partly of asbestos, and processes incidental thereto;
 - (e) manufacture of asbestos card board 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. *Defination.*—For the purpose of this schedule—

- (a) "asbestos" means any fibrous silicate mineral and any admixture containing actionlite, amosite, anthophyllite, drysotile, crocidolite, Tremolite or any mixture thereof whether crude, crushed or opened;
- (b) "asbestos textile" 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;
- (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 crushing, 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 equipments.*—Any tool 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 machine, 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, hopper 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) Work places at which the filling or emptying of sacks, skips or other portable containers, weighting or other process incidental thereto which is effected by hand, is carried on;
- (f) scale cleaning machines;
- (g) mixing and blending of asbestos by hand; and
- (h) any other process in which dust is given off into the work environment.

(2) Exhaust Ventilation equipment provided in accordance with sub-paragraph (i) 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 work room.

(4) The asbestos bearing dust removed from any workroom by the exhaust system shall be collected in suitable receptacles or filter bogs which shall be isolated from all work areas.

(5) Testing and examination of ventilating systems —

- (1) All ventilating systems used for the purposes of extracting or suppressing dust as required by this schedule shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12

months. Any defects found by such examinations or test shall be rectified forthwith.

- (2) A register containing particulars of such examination and tests and the state of the plant and the repairs or alternation (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 there from such asbestos shall not be distributed within a factory except in such receptacles or in a totally enclosed system of conveyance.

(8) *Asbestos sacks*.—(1) All sacks used as receptacles for the purpose of transport of asbestos within the factory shall be constructed of impermeable materials and shall be kept in good repair.

(2) A sack which has contained asbestos shall not be cleaned by hand beating but by a machine, complying with paragraph-3.

(9) Maintenance of floors and work place.—

- (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-rule (1) shall so far as is practicable; as carried out by means of vacuum cleaning equipment so designed and constructed and so used that asbestos dust neither escapes nor is discharged into the air of any work place.
- (3) When the cleaning is done by any method other than that mentioned in sub-paragraph (2); the persons doing cleaning work and any other person employed in that room shall be provided with respiratory protective equipment and protective clothing.
- (4) The vacuum cleaning equipment used in accordance with provisions of sub paragraph (2); shall be properly maintained and after each cleaning operation; its surfaces kept in a clean state and free from asbestos waste and dust.
- (5) Asbestos waste shall not be permitted to remain on the floors or other surfaces at the work place at the end of the working shift and shall be transferred without delay to suitable receptacles. Any spillage of asbestos waste occurring during the course of the work at any time shall be removed and transferred to the receptacles maintained for the purpose without delay.
- (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 strick; and
 - (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-rule (2) above.
 - (4) All protective clothing in use shall be de-dusted under an efficient exhaust draught or by vacuum cleaning and shall be washed at suitable intervals. The cleaning schedule and procedure should be such as to ensure the efficiency in protecting the wearer.
 - (5) All breathing apparatus shall be cleaned and disinfected at suitable intervals and thoroughly inspected once 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 sub-paragraph (1) for which breathing apparatus is necessary to be provided under that sub-paragraph unless he has been fully instructed in the proper use of that equipment.

(8) No breathing apparatus provided in pursuance of sub-paragraph (1) which has been worn by a person shall be worn by another person unless it has been thoroughly cleaned and disinfected since last being worn and the person has been fully instructed in the proper use of that equipment.

(11) Separate accommodation for personal clothing—A separate accommodation shall be provided in a conveniently accessible position for all persons employed in operations to which this schedule applied for storing of personal clothing. This should be separated from the accommodation provided under sub-paragraph (2) 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 stand pipes at intervals of not less than one metre.

(3) Not less than one half of the total number of washing places shall be provided with bathroom.

(4) Sufficient supply of clean towels made of suitable materials shall be provided, that such towels shall be supplied individually for each workers 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 the 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 areas towards to all persons regarding:—

- (a) Hazards to health from asbestos dust,
- (b) Need to use appropriate protective equipment,
- (c) Prohibition of entry to unauthorised persons, or authorised 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 a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical checkup against the hazards involved and to diagnose and treat the industrial disease which are likely to creep in such type of process, and
 - (b) provide to the said medical practitioner all the necessary facilities for the purpose referred to in clause (a).
- (2) The record of medical examinations and appropriate tests carried out by the said medical practitioner shall be maintained in a separate register approved by the Chief Inspector of Factories, which shall be kept readily available for inspection by the Inspector.

19. *Medical examination by Certifying surgeon.—*

- (1) Every worker employed in the processes specified in paragraph 1 shall be examined by a certifying surgeon 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 workers shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the certifying surgeon.
- (2) Every workers employed in the process referred to sub-paragraph (1) shall be re-examined by a certifying surgeon at least once in every twelve calendar months. Such examination shall wherever the certifying surgeon considers

appropriate include all the tests specified in sub-paragraph (1) except chest-X-ray which will be carried out once in 3 years.

- (3) The certifying surgeon after examining a worker, shall issue a certificate of fitness in form 30. The record of examination and re-examination carried out shall be entered in the certificate & certificate shall kept in the custody of the manager of the factory. The record of each examination carried out under sub-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the certifying surgeon in a health register in form 19.
- (4) The certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.
- (5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his finding 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 certifying surgeon, after further examination, again certifies him fit for employment in those processes.

20. *Exemption.*—If in respect of any factory, the Chief Inspector is specified that owing to the exceptional circumstances or in frequency of the processes or for any other persons all or any of the provisions of this schedule

is not necessary for protection of the workers in the factory, the Chief Inspector of Factories may by a certificate in writing which he may at his discretion revoke at any time, exempt such factory from all or any of such provisions subject to such conditions, if any as he may specify therein."

(c) In rule 100, for the existing schedule XVI the following schedule shall be substituted, namely:—

"SCHEDULE-XVI

*Manipulation of stone or any other material
containing free silica.*

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

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 level equal to or below the maximum permissible level for silica dust as laid down in table 2 appended to Rule 123A :

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

4. *Maintenance of floors.*—(1) All floors or places where fine dust is likely to settle on and whereon any person has to work or pass shall be of impervious material and maintained in such condition that they can be thoroughly cleaned by a moist method or any other method which would prevent dust being 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 atleast 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 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 operation are carried out.

6. *Medical facilities and records of examinations and tests.*—(1) The occupier of every factory to which schedule applies shall:—

- (a) Employ a qualified medical practitioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial disease which are likely to creep in such type of process; and

Necessary facilities for the purpose referred to in clause (1).

(2) The record of medical examination and appropriate test 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 certifying surgeon.—

(1) Every worker employed in the processes specified in paragraph 1, shall be examined by a certifying surgeon 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 certified fit for such employment by the certifying surgeon.

(2) Every worker employed in the said processes shall be re-examined by a certifying surgeon at least once in every twelve months. Such examination shall wherever the certifying surgeon 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 certifying surgeon after examining a worker, shall issue a certificate of fitness in form 30. 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-paragraph (1) and (2), including the nature and the results of the tests, shall also be entered by the Certifying surgeon in a health register in form 19.

(4) The Certificate of fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the said processes on the ground that continuance therein would involve special danger to the health of the worker, he shall make a record of his findings in the said certificate and the health register. The entry of his findings in these

documents should also include the period for which he considers that the said person is unfit for work in the said processes.

(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 certifying surgeon, after further examination, again certified him fit for employment in those processes.

8. *Exemptions.*—If in respect of any factory, the Chief Inspector 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 the schedule is not necessary for protection of the workers in the factory, the Chief Inspector may by a certificate in writing which he 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 may specify therein.”

(d) In rule 100 in schedule XVII,

(i) “At entry No. 4 after the words “flooded with water” and before the words “whenever necessary” the expression “water sprinkler system should be provided over the ammonia receiver” shall be added.”

(ii) At entry No. 6, item (a) shall be substituted by the following, namely:—

“(a) Corrosive substances shall not be filled moved or carried except in containers or through pipes and when they are to be transported in containers, they shall be included in crates of sound construction and of sufficient strength”.

(iii) At entry No. 7, item (a) shall be substituted by the following, namely:—

“7(a) Tilting, lifting or pumping arrangements shall be used for emptying jars, carboys and other containers of corrosives.”

- (iv) At entry No. 10 in item (c) after the words "thoroughly examined" and before the words "every year" the words "by competent person" shall be inserted.
- (v) After item (c) of entry No. 10, following new entry shall be inserted, namely:—

"10A. Safety Measures:—

1. All the system pipe line should be of welded joints instead of flanged joints.
2. ISI valves should be provided in lines and periodical maintenance of valves should be checked.
3. Whatever corrosive substances if coming out of valves should be taken to scrubber for neuterlisation through a close circuit system.
4. For the early detection of leakage of any corrosive substance sensitive devices should be provided.
5. Absorber of proper capacity should be provided.
6. Stand by generator of adequate capacity should be provided in factories for toxic gases."

'SCHEDULE XXIV

Operations involving high Noise levels.

1. *Application.*—This schedule shall apply to all operations in any manufacturing process having high noise level.
2. *Definitions.*—For the purpose of this schedule—
 - (a) "Noise" means any unwanted sound.

- (b) "High noise level" means any noise level measured on the A-weighted scale is 90 db or above.
- (c) "Decibel" means one-tenth of "Bel" which is the fundamental division of a logarithmic scale used to express the ratio of two specified or implied quantities, the number of "Bels" denoting such a ratio being the logarithm to the base of 10 of this ratio. The noise level (or the sound pressure level). Corresponds to a reference pressure of 20×10^{-5} newtons per square or 0.0002 dynes per square centimeter which is the schedule of hearing, that is the lowest sound pressure level necessary to produce the sensation of hearing in average healthy listeners. The decibel in abbreviated form is dB.
- (d) "Frequency" is the rate of pressure variations expressed in cycles per second or hertz.
- (e) "dBA" refers to sound level in decibels as measured on a sound levelmeter operating on the A-weighting net work with slow meter response.
- (f) "A weighting" means making graded adjustments in the intensities of sound of various frequencies for the purpose of noise measurement, so that the sound pressure level measured by an instrument reflects the actual response of the human ear to the sound measured.

3. *Protection against noise.*—(1) In every factory suitable engineering control of administrative measures shall be taken to ensure, so far as is reasonable practicable that no worker is exposed to sound level exceeding the maximum permissible exposure levels specified in Tables 1 and 2.

TABLE 1

Permissible Exposure in cases of Continuous Noise.

Total time of exposure (Continuous or a number of short term exposures) per day in hours.	Sound pressure level in dBA
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
$\frac{3}{4}$	107
$\frac{1}{2}$	110
$\frac{1}{4}$	115

Notes.—1. No exposure in excess of 115 dBA is to be permitted.

2. For any period of exposure falling in between any figure and the next higher or lower figure as indicated in column 1, the permissible sound pressure level is to be determined by extrapolation on a proportionate basis.

TABLE 2

Permissible Exposure levels of Impulsive or Impact Noise.

Peak Sound pressure level in dB	Permitted number of impulses or impacts per day
140	100
135	315
130	1,000
125	3,160
120	10,000

Notes.—1. No exposure in excess of 140 dB peak sound pressure level is permitted.

2. For any peak sound pressure level falling in between any figure and the next higher or lower figure as indicated in column 1, the permitted number of impulses of impact per day is to be determined by extrapolation on a proportionate basis.

(2) For the purpose of this schedule, if the variations in the noise level involve maximum at intervals of one second or less the noise is to be considered as a continuous one and the criteria given in Table 1 would apply. In other cases, the noise is to be considered as impulsive or impact noise and the criteria given in table 2 would apply.

(3) When the daily exposure is composed of two or more periods of noise exposure at different levels their combined effect should be considered, rather than the individual effect of each. The mixed exposure should be considered to exceed the limit value if the sum of the fraction $\frac{C_1}{T_1} + \frac{C_2}{T_2} + \dots + \frac{C_n}{T_n}$ exceeds unity,—

Where the C1, C2 etc. indicate the total time of actual exposure at a specified noise level and T1, T2, etc. denote the time of exposure permissible at that level. Noise exposure of less than 90 dBA may be ignored in the above calculation.

(4) Where it is not possible to reduce the noise exposure to the levels specified in sub-rule (1) By reasonably practicable engineering control or administrative measures, the noise exposure shall be reduced to the greatest extent feasible by such control measures, the each worker so exposed shall be provided with suitable ear protectors so as to reduce the exposure to noise to the levels specified in sub-rule (1).

(5) Where the ear protectors provided in accordance with sub-paragraph (2) and worn by a worker cannot still attenuate the noise reaching near his ear, as determined by subtracting the attenuation value in dBA of the ear protectors concerned from the measured sound

pressure level to a level permissible under Table 1 or Table 2 as the case may be, the noise exposure period shall be suitably reduced to correspond to the permissible noise exposures specified in sub-paragraph (1).

(6) (a) In all cases where the prevailing sound levels exceed the permissible levels specified in sub-paragraph (1) there shall be administered an effective hearing conservation programme which shall include among other hearing conservation measures, pre-employment and periodical auditory surveys conducted on workers exposed to noise exceeding the permissible levels, and rehabilitation of such workers either by reducing the exposure to the noise level or by transferring them to place where noise levels are relatively less or by any other suitable means.

(b) Every worker employed in areas where the noise exceeds the maximum permissible exposure levels specified in sub-rule (1) shall be subjected to an auditory examination by a certifying Surgeon within 14 days of his first employment there after, shall re-examined at least once, every 12 months. Such initial the periodical examinations shall include tests which the certifying Surgeon may consider appropriate, and shall include determination of auditory thresholds for pure tones on 125, 250, 500, 1000, 2000, 4000 and 8000 cycles per second.

"SCHEDULE XXV

Manufacture of Rayon by Viscose Process.

1. *Definitions.*—For the purpose of this schedule—

- (a) "approved" means approved for the time being in writing by the Chief Inspector;
- (b) "breathing apparatus" means a helmet or face piece with necessary connections by means of which the person using it in a poisonous, apphyxiating or irritant atmospher breathes unpolluted air; or any other approved appratus;
- (c) "churn" means the vessel in which alkali cellulose pulp is treated with carbon disulphide;

- (d) "dumping" means transfer of cellulose exothate from a dry churn to a dissolver;
- (e) "efficient exhaust draught" means localised ventilation by mechanical means for the removal of any gas or vapour, so as to prevent it from escaping into the air of any place in which work is carried on. No draught shall be deemed to be efficient if it fails to control effectively any gas or vapour generated at the point where such gas or fume originates.
- (f) "fume process" means any process in which carbon disulphide or hydrogen sulphide is produced, used or given off;
- (g) "life belt" means a belt made of leather or other suitable material which can be securely fastened round the body with a suitable length of rope attached to it, each of which is sufficiently strong to sustain the weight of a man;
- (h) "protective equipment" means apron, goggles, face shields, footwear, gloves and overalls made of suitable materials.

2. *Ventilation.*—(1) In all workrooms where a fume process is carried on, adequate ventilation by natural or mechanical means shall be provided so as to control, in association with other control measures, the Concentration of Carbon-disulphide and hydrogen sulphide in the air of every work environment within the permissible limits.

(2) Notwithstanding the requirements in subparagraph (1) an efficient exhaust draught shall be provided and maintained to control the concentration of Carbon-di-sulphide and hydrogen sulphide in the air at the following locations:—

- (a) dumping hoppers of dry churns,
- (b) Spinning machines,
- (c) hydro-extractors for yarn cakes,
- (d) after treatment processes and

(e) trick rollers and cutters used in staple fibre spinning,

(f) Spin baths.

(3) In so far as the spinning machines and trio rollers and cutters used in staple fibre spinning are concerned, they shall be, for the purpose of ensuring the effectiveness of the exhaust draught to be provided as required in sub-paragraph (1), enclosed as fully as practicable and provided with suitable shutters in sections to enable the required operations to be carried out without giving rise to undue quantities of Carbon-di-sulphide and hydrogen sulphide escaping to the work environment.

(4) No dry churn shall be opened after completion of reaction without initially exhausting the residual vapours of Carbon-di-sulphide by operation of suitable and efficient arrangement for exhausting the vapours which shall be continued to be operated as long as the churn is kept opened.

(5) Whenever any ventilation apparatus normally required for the purpose of meeting the requirements in sub-paragraphs (2) (3) and (4) is ineffective, fails, or is stopped for any purpose whatsoever, all persons shall be required to leave the work areas where the equipment or process specified in the above said sub-paragraphs are in used as soon as possible and in any case not later than 15 minutes after such as occurrence.

(6) (i) All ventilating systems provided for the purposes as required in sub-paragraphs (2), (3) and (4) shall be examined and inspected once every week by a responsible person. It shall be thoroughly examined and tested by a competent person once in every period of 12 months. Any defects found by such examinations or test shall be rectified forthwith.

(ii) A register containing particulars of such examinations and tests, and the state of the systems and the repairs or alterations (if any found to be necessary shall be kept and shall be available for inspection by an Inspector.

3. *Waste from Spinning machines.*—Waste yarn from the spinning machines shall be disposed in suitable containers provided with close fitting covers. Such waste shall be disposed off as quickly as possible after decontamination.

4. *Lining of Dry Churns.*—The inside surface of all dry churns shall be coated with a non-sticky paint so that cellulose anthate will not stick to the surface of the churn. Such coating shall be maintained in good condition.

5. *Air monitoring.*—(1) To ensure the effectiveness of the control measures, monitoring of carbon-disulphide and hydrogen sulphide in air shall be carried out once atleast in every shift and the record of the results so obtained shall be entered in a register specially maintained for the purposes.

(2) For the purpose of the requirement in subparagraph (1), instaneous gas detector tubes shall not be used. Samples shall be collected over a duration of not less than 10 minutes and analysed by an approved method. The locations where such monitoring is to be done shall be as directed by the Inspector.

(3) If the Concentrations of either carbon disulphide or hydrogen sulphide exceeds the permissible limits for such vapour or gas as laid down in Rule 123A, suitable steps shall be taken for controlling the concentration in air of such contaminants. A report of such occurrences shall sent to the Chief Inspector forthwith.

6. *Prohibition relating to employment of young person.*—No young person shall be employed or permitted to work in any fume process or in any room in which any such process is carried on.

7. *Prohibition to remain in fume process room.*—No person during his intervals for meal, or rest shall remain in any room wherein fume process is carried on.

8. *Protective equipment.*—(1) The occupier shall provide and maintain in good condition protective equipment as specified in the Table for use of persons employed in the processes referred to therein.

TABLE

Process	Protective equipment
1. Dumping	Overalls, face shields gloves and footwear all made of suitable material.
2. Spining	Suitable aprons' gloves and footwear.
3. Process involving or likely to involve contact with viscose solution	Suitable gloves and footwear.
4. Handling of sulphur	Suitable chemical goggles.
5. Any other process involving contact with hazardous chemicals	Protective equipment as may be directed by the chief Inspector by an order in writing.

(2) A suitable room, rooms or lockers shall be provided exclusively for the storage of all the protective equipment supplied to workers and no such equipment shall be stored at any place other than the room, rooms or lockers so provided.

9. *Breathing apparatus.*—(1) There shall be provided in every factory where fume process is carried on sufficient supply of.—

(a) breathing apparatus,

(b) Oxygen and a suitable appliances for its administration, and

(c) life belts.

(2) (i) The breathing apparatus and other appliances referred to in sub-paragraph (1) shall be maintained in good condition and kept in appropriate location so as to be readily available.

(ii) The breathing apparatus and other appliances referred to in clauses (a) and (b) of sub-paragraph (1) shall be cleaned and disinfected at suitable intervals and thoroughly inspected once every month by responsible person.

(iii) A record of the maintenance of the condition of the breathing apparatus and other appliances referred to in sub-clause (1) shall be entered in a register provided for

that purpose which shall be readily available for inspection by an Inspector.

(3) Sufficient number of workers shall be trained and periodically retrained in the use of breathing apparatus and administering artificial respiration so that at least 2 such trained person would be available during all the working hours in each room in which fume process is carried on.

(4) Breathing apparatus shall be kept properly labelled in clean, dry, light, proof cabinets and if liable to be affected by fumes, shall be protected by placing them in suitable containers.

(5) No person shall be employed to perform any work, specified in sub-paragraph (1) for which breathing apparatus is necessary to be provided under that sub-paragraph unless he has been fully instructed in the proper use of the equipment.

(6) 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 duly, instructed in the proper use of that equipment.

10. *Electric fittings.*—All electric fitting in any room in which carbon-disulphide is produced, used or given off or is likely to be given off into work environment, other than a electric conductors shall either be enclosed in metal conducts spinning room shall be flame proof construction and all or be lead-sheathed.

11. *Prohibition relating to smoking etc.*—No person shall smoke or carry matches, fire or naked light or other means of producing a naked light or spark in a room in which fume process is carried on. A notice in the language understand by the majority of the workers shall be pasted at prominent locations in plant prohibiting smoking and carrying of matches, fire or naked light or other means of producing naked light or spark into such rooms:

Provided that fire, naked light or other means of producing a naked light or spark may be carried on in such room only when required for the purposes of the process itself under the direction of a responsible person.

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 25 persons employed.

(2) The washing places shall have standpipes & placed at intervals of not less than one metre.

(3) Not less than one half of the total number of washing places shall be provided with bathrooms.

(4) Sufficient supply of clean towels made of suitable materials shall be provided.

(5) Provided that such towels shall be supplied individually for each worker if so ordered by the Inspector.

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

13. *Rest Room.*—(1) A rest room shall be provided for the workers engaged on doffing operations of filament yarn spinning process.

(2) Such rest room shall be provided with fresh air supply and adequate seating arrangement.

14. *Cautionary notice and instructions.*—(1) The following cautionary notice shall be prominently displayed in each fume process room.

"Cautionary Notice

1. Carbon disulphide (CS₂) and Hydrogen sulphide (H₂S) which may be present in this room are hazardous to health.
2. Follow safety instructions.
3. Use protective equipment and breathing apparatus as and when required.

4. Smoking is strictly prohibited in this area."

This notice shall be in a language understood by the majority of the workers and displayed where it can be easily and conveniently read. If any worker is illiterate, effective steps shall be taken to explain carefully to him the contents of the notice so displayed.

(2) Arrangements shall be made to instruct each workers employed in any room in which a fume process is carried on regarding the health hazard connected with their work and the preventive measures and methods to protect them selves. Such instructions shall be given on his first employment and repeated periodically.

(3) Simple and special instructions shall be framed to ensure that effective measures will be carried out in case of emergency involving escape of carbon disulphide and hydrogen sulphide. These instructions shall be displayed in the concerned areas and workers shall be instructed and trained in the actions to be taken in such emergencies.

15. *Medical facilities and records of examinations and tests.*—(1) The occupier of each factory to which this schedule applies, shall—

(a) Employ a qualified medical practioner who is in the opinion of the Chief Inspector capable by virtue of his qualification, training and experience, conducting a thorough medical check up against the hazards involved and to diagnose and treat the industrial disease which are likely to creep in such type of process and,

(b) Provide to the said medical officer all the necessary facilities for the purpose referred to in clause (a).

(2) The record of medical examination and appropriate test 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.

16. *Medical examination by the certifying Surgeon.*—(1) Every worker employed in the fume process shall be examined by a certifying Surgeon within 15 days of his first employment such examination shall include test for examination of exposure co-efficient (iodine azide test for urine), and cholestrol, as well as electrocardiogram (ECG) and Central Nervous system (CNS) test. No worker shall be allowed to work after 15 days of his first employment in the factory unless certified fit for such employment by the certifying Surgeon.

(2) Every worker employed in the fume process shall be re-examined by a certifying Surgeon at least once in every twelve calender months. Such examination shall, wherever the Certifying Surgeon considers appropriate, include all the test specified in sub-paragraph (1).

(3) The Certifying Surgeon after examining a worker shall issue a certificate of Fitness in Form No. 30. 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 test, shall also be entered by the Certifying Surgeon in a health register in Form No. 19.

(4) The certificate of Fitness and the health register shall be kept readily available for inspection by the Inspector.

(5) If at any time the certifying surgeon is of the opinion that a worker is no longer fit for employment in the fume process on the ground that continuance therein would involve special danger to the health of the worker he shall make a record of his findings in the said certificate and the health register. The entry of his findings in these documents should also include the period for which he considers that the said person is unfit for work in the fume process.

(6) No person who has been found unfit to work as said in sub-paragraph (5) above shall be re-employed

or permitted to work in the fume process unless the Certifying Surgeon, after further examination again certifies him fit for employment in such process.

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

"SCHEDULE XXVI.

Highly Flammable Liquids and Flammable Compressed Gases.

1. *Application.*—These rules will be applicable to all factories where highly flammable liquids or flammable compressed gases are manufactured, stored, handled or used.

2. *Definition.*—For the purpose of this schedule—

(a) "highly flammable liquid" means any liquid including its solution, emulsion or suspension which when tested in a manner specified by sections 14 and 15 of the Petroleum Act, 1934, (30 of 1934) gives off flammable vapours at a temperature less than 32 degrees centigrade;

(b) "flammable compressed gas" means flammable compressed gas as defined in section 2 of the Static and Mobile pressure vessels (Unfired) Rules, 1981 framed under the explosives Act, 1884.

3. *Storage.*—(1) Every flammable liquid or flammable compressed gas used in every factory shall be stored in suitable fixed storage tank, or in suitable closed vessel located in a safe position under the ground, in the

open or in a store room of adequate fire resistant construction.

(2) Except as necessary for use, operation or maintenance, every vessels or tank which contained a highly flammable liquid for flammable compressed gas shall be always kept closed and all reasonably practicable steps shall be taken to contain or immediately drain off to a suitable container any spill or leak that may occur.

(3) Every container, vessel, tank, cylinder, or store room used for storing highly flammable liquid or flammable compressed gas shall be clearly and in bold letters marked "Danger-Highly Flammable Liquid" or "Danger-Flammable Compressed Gas."

4. *Enclosed systems for conveying High Flammable Liquids.*—Wherever it is reasonably practicable, highly flammable liquids shall be conveyed within factory in totally enclosed systems consisting of pipe lines, pump and similar appliances from the storage tank or vessel to the point of use. Such enclosed systems shall be so designed, installed, operated and maintained as to avoid leakage or the risk of spilling.

5. *Preventing Formation of Flammable mixture with Air.*—Wherever there is a possibility for leakage or spill of highly flammable liquid or flammable compressed gas from an equipment, pipe line, valve, joint or other part of a system, all practicable measures shall be taken to contain, drain off or dilute such spills or leakage as to prevent formation of flammable mixture with air.

6. *Prevention of Ignition.*—(1) In every room work place or other location where highly flammable liquid or flammable combustible gas is stored, conveyed, handled or used or where there is danger of fire or explosion from accumulation of highly flammable liquid or flammable compressed gas in air, all practicable measure shall be taken to exclude the sources of ignition. Such

precautions shall include the following:

- (a) All electrical apparatus shall either be excluded from the area of risk or they shall be of such construction and so installed and maintained as to prevent the danger of their being a source of ignition;
- (b) effective measure shall be adopted for prevention of accumulation of static charges to a dangerous extent;
- (c) No person shall wear or be allowed to wear any foot wear having iron or steel nails or any other exposed ferrous materials which is likely to cause sparks by friction;
- (d) smoking, lighting or carrying of matches, lighters or smoking materials shall be prohibited;
- (e) transmission belts with iron fastners shall not be used; and
- (f) all other precautions, as are reasonably practicable, shall be taken to prevent initiation or ignition from all other possible sources such as open flames, frictional sparks, overheated surfaces of machinery or plant, chemical or physical-chemical reaction and radiant heat.

7. *Prohibition of smoking.*—No person shall smoke in any place where highly flammable liquid or flammable compressed gas is present in circumstances that smoking would give rise to a risk of fire. The occupier shall take all practicable measure to ensure compliance with this requirement including display of a notice indicating prohibition of smoking at every places where this requirement applies.

8. *Fire Fighting.*—In every factory where highly flammable liquid or flammable compressed gas is manufactured stored, handled or used, appropriate and adequate means of fighting a fire shall be provided. The adequacy and suitability of such means which expression includes the fixed and portable fire extinguishing systems, extinguishing material procedures

and the process of fire fighting, shall be to the standards and levels prescribed by the Indian standards applicable and in any case not inferior to the stipulations under Rule 63.

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

3. In schedule of rule 101—

(i) after entry No (c) following new entry shall be inserted, namely:—

“(f) leakage incidence of any toxic gas or other hazardous substances.”

(ii) In the schedule of form No. 20, after entry No. “e” following new entry shall be inserted, namely:—

“(f) Leakage incidence of any toxic gas or other hazardous substances.”

4. After rule 107, following new rule and schedule shall be inserted, namely:—

107A—Permissible levels of certain chemical substance in work environment.—Without prejudice to the requirements in any other provisions in the Act or the Rules, the requirements specified in this schedule shall apply to all factories.

SCHEDULE

1. **Definitions.**—For the purpose of this schedule—

(a) “Mg/M³” means milligrams of a substance per cubic meter of air;

(b) “mppom” means a million particals of a substance per cubic meter of air;

- (c) "ppm" means parts of vapour or gas per million parts air by volume at 25°C and 760 mm of mercury pressure :
- (d) "Time weighted average concentration" means the average concentration of a substance in the air at any work location in a factory computed from evaluation of adequate number of air samples taken at that location spread over the entire shift on any day, after giving weightage to the duration for which each such sample is collected and the concentration prevailing at the time of taking the sample.

$$\text{Time weighted average concentration} = \frac{C_1 T_1 + C_2 T_2 + \dots + C_n T_n}{T_1 + T_2 + \dots + T_n}$$

Where C1 represents the concentration of the substance for duration T1 (in hours);

C2 represents the concentration of the substance for duration T2 (in hours); and

Cn represents the concentration of the substance for duration Tn (in hours);

- (e) "work location" means a location in a factory at which a worker works or may be required to work at any time during any shift on any day.

2. Limits of concentrations of substances at work locations.—(i) The time weighted average concentration of any substance listed in Table i or 2 of the schedule, at any work location in a factory during any shift on any day shall not exceed the limit of the permissible time weighted average

concentration specified in respect of that substance:

Provided that in the case of a substance mentioned in Table 1 in respect of which a limit in terms of short term maximum concentration is indicated, the concentration of such a substance may exceed the permissible limit of the time weighted average concentration for the substance for short periods not exceeding 15 minutes at a time, subject to the condition that—

- (a) Such periods during which the concentration exceeds the prescribed time weighted average concentration are restricted to not more than 4 per shift;
- (b) the time interval between any two such periods of higher exposure shall not be less than 60 minutes; and
- (c) at no time the concentration of the substance in the air shall exceed the limit of short term maximum concentration.

(2) In the case of any substance given in table 3, the concentration of the substance at any work location in a factory at any time during any day shall not exceed the limit of exposure for that substance specified in the table.

(3) In the cases where the word "skin" has been indicated against certain substance mentioned in Tables 1 and 3, appropriate measures shall be taken to prevent absorption through cutaneous routes particularly skin, mucous membranes and eyes as the limits specified in these Tables are for conditions where the exposure is only through respiratory track

(4) (a) In case, the air at any work location contains a mixture of such substances mentioned in Table 1, 2 or 3 which have similar toxic properties, the time weighted concentration of each of these substances during the shift should be such, that when these time weighted concentration divided by the respective permissible time weighted average concentration specified in the above mentioned tables, and the fractions obtained are added together, the total shall not exceed unity.

$$C_1 \quad C_2 \quad \dots \quad C_n$$

i.e. + $L_1 \quad + \dots \quad L_2 \quad \dots \quad L_n$ should not exceed unity

when C_1, C_2, \dots, C_n are the time weighted concentration of toxic substance 1, 2, \dots and n respectively, determined after measurement at work location, and L_1, L_2, \dots, L_n are the permissible time weighted average concentration of the toxic substance 1, 2, \dots and n respectively.

(b) In case the air at any work location contains a mixture of substances, mentioned in Table 1, 2 or 3 and these do not have similar toxic properties, that the time weighted concentration of each of these substances shall not exceed the permissible time weighted average concentration specified in the above mentioned tables, for that particular substance.

(c) The requirement in clauses (a) and (b) shall be in addition to the requirements in paragraphs 2 (1) and 2 (2).

3. Sampling and evaluation procedures.—(1) Notwithstanding provisions in any other paragraphs, the sampling and evaluation procedures to be adopted for checking compliance with the provision in the schedule shall be as per standard procedure in vogue from time to time.

(2) Notwithstanding the provisions in paragraph 5, the following conditions regarding the sampling and evaluation procedures relevant to checking compliance with the provisions in this schedule are specified:—

- (a) For determination of the number of particles per cubic meter in item 1 (a) (i) (1) in Table 2, samples are to be collected by standard or midget impinger and the counts made by light-field technique.
- (b) The percentage of quartz in the 3 formulae given in item 1 (a) (i) of Table 2 is to be determined from air borne samples.
- (c) For determination of number of fibres as specified in item 2 (a) of Table 2, the membrane filter method at 430 magnification (4mm objective) phase contrast illumination should be used.
- (d) Both for determination of concentration and percentage of quartz for use of the formula given in

item 1 (a) (i) (2) of Table 2, the fraction passing through a size-selector with the following characteristics should only be considered:—

Aerodynamic diameter (Unit density Sphere)	Percentage allowed by size-selector
2.0	90
2.5	75
3.5	50
5.00	25
10.0	0

4. **Power to require assessment of concentration of substances.**—(1) An Inspector may, by an order in writing, direct the occupier or manager of a factory to get before any specified date, the assessment of the time weighted average concentration at any work location of any of the substances mentioned in Table 1, 2 or 3 carried out.

(2) The results of such assessment as well as the method followed for air sampling and analysis for such assessment shall be sent to the inspector within 3 days from the date of completion of such assessment and also a record of the same kept readily available for inspection by an Inspector.

5. **Exemption.**—If in respect of any factory or a part of factory, the Chief Inspector is satisfied that, by virtue of the pattern of working time of the workers at different work location or an account of other circumstances, no worker is exposed, in the air at the work locations, to a substance or substances specified in Table 1, 2 or 3 to such an extent as is likely to be injurious to his health, he (the Chief Inspector) may by an order in writing, exempt the factory or a part of the factory from the requirements in paragraph 2, subject to such conditions, if any as he may specify therein.

TABLE 1

Substance	Permissible limits of exposure			
	Time-weighted average concentration		Short-term maximum concentration	
	1	2	3	
	PPm	mg/m3	PPm	mg/m3
Acetic acid	10	25	15	37
Acrolein	0.1	0.25	0.03	0.8
Aldrin-skin	..	0.25	..	0.75
Aniline (Co-Pisomers) skin	0.1	0.5	..	..
Ammonia	25	18	35	27
Aniline skin	2	10	5	20
Arsenic & Compound (as As)	..	0.2	..	..
Benzene	10	30	..	..
Bromine	0.1	0.7	0.3	2
2 Butanone Methylene Ketone-MEK)	200	590	300	885
n-Butylacetate	150	710	200	950
Sec/tert. /Butyl acetate	200	950	250	1190
Cadmium-dust and salts(asCd)	..	0.05	..	0.2
Calcium Oxide	..	2	..	..
Carbaryl (Sovin)	..	5	..	10
Carbofuran(Furadan)	..	0.1	..	..
Carbon disul fide-skin	2	60	30	90
Carbon monoxide	50	55	400	440
Carbon tetrachloride-skin	10	65	20	130
Carbonyl chloride (Phosgene)	0.1	0.4	..	..
Chlordane skin	..	0.5	..	2
Chlorobenzene (monom chloro benzene)	75	350	..	..
Chlorine	1	3	3	9
bis-chloromethyl ether Chromic acid and chromates(as Cr.)	0.001	..	..	..
Chromium, Sol. chromic Chromous Salts (As Cr.)	..	0.05	..	..
Copper Fume	..	0.5	..	..
Cotton Dust, raw	..	0.2	..	0.6
Cresol, all isomers skin	5	22	..	..
Cyanides, as CN skin	..	5	..	..
Cyanogen	10	20	..	..
DDT (Dichloro diphenyl-trichloroethane)	..	1	..	3
Dameton-skin	0.01	0.1	0.03	0.3
Diazion-skin	..	0.1	..	0.3
Dibutyl Phthalate	..	5	..	10
Dichloroves (DDVP) Skin	0.1	1	0.3	3
Dieldrin-skin	..	0.25	..	0.75
Dinitro benzene (all isomers) skin	0.15	1	0.5	3
Dinitrotoluene skin	..	1.5	..	5
Diphenyl	0.2	1.5	0.6	4
Endosulfan (Thiodan) skin	..	0.1	..	0.3
Endrin-skin	..	0.1	..	0.3
Ethyl acetate	400	1000	..	..
Ethyl alcohol	1000	1900	..	..
Ethyl amine	10	18	..	..
Flourides (as F)	..	2.5	..	..
Fluorine	1	2	2	4
Hydrogen Cyanide-skin	10	11	15	16

1	2	3	
Hydrogen Sulphide	10	15	27
Iron Oxide Fume (Fe ₂ O ₃ asFe)	..	5	10
Isoamyl acetate	100	525	655
Isoamyl alcohol	100	360	450
Isobutyl alcohol	50	150	225
Lead, inorg. fumes and dusts (as Pb)	..	0.15	0.45
Lindane-skin	..	0.5	1.5
Melathion-skin	..	10	..
Manganese fume (as Mn)	..	1	3
Mercury (as Hg)	..	0.05	0.15
Mercury (alkyl compounds) skin(as Hg)	0.001	0.01	0.03
Methyl alcohol (methanel) skin	200	260	310
Methyl cellosolve skin (2methoxy ethanol)	25	80	120
Methyl isobutyl Ketone skin	100	410	510
Naphthalene	10	50	75
Nickel carbonyl (as Ni)	0.05	0.35	..
Nitric acid	2	5	10
Nitric oxide	25	30	45
Nitrobenzene-skin	1	5	10
Oil mist mineral	..	5	10
Parathion skin	..	0.1	0.3
Phenel skin	5	19	38
Phorate (Thimet) skin	..	0.05	0.2
Phosgene(Carbonyl chloride)	0.1	0.4	..
Phosphine	0.3	0.4	1
Phosphorus Pentachloride	..	1	3
Phosphorus Trichloride	0.5	3	..
Picric acid skin	..	0.1	0.3
Phosphorus (yellow)	..	0.1	0.3
Pyridine	5	15	30
Silane (silicon tetrahydride)	0.5	0.7	1.5
Styrene, monower (Phenyl ethylene)	100	420	525
Sulphur dioxide	5	13	..
Sulfuric acid	..	1	..
Toluene (toluol) skin	100	375	560
O-Taludine	5	22	44
Trichloroethylene	100	535	800
Vinyl Chloride	5	10	..
Welding fumes (NOC)	..	5	..
Xylene (o-m-p-isomers) skin	100	435	655

TABLE 2

Substance	Permissible time weighted average concentration
1	2
1. Silica	
(a) Crystalline	
(i) Quarts	
(1) In terms of dust count	1060
	%Quartz + 10 mppem
(2) In term of respirable dust.	10
	% respirable quartz + 2 mg/m ³
(3) In terms of total dust	30
	% quartz + 3, mg/m ³
(ii) Cristobalite	Half the limits given against quartz.
(iii) Tridymite	Half the limits given against quartz.

1	2
(iv) Silica fused.	Same limit as for quartz.
(v) Tripoli	Same limit as in formula in items 2 given against quartz.
(b) Amorphous	705 mppcm.
2. Silicate having less than 1% free silica by weight	
(a) Asbestos fibres longer than 5 microne.	
(i) Amosite	0.5 fibre/cubic centimeter
(ii) Chrysotile	2 fibres/cubic centimeter.
(iii) Crocidolite	0.2 fibre/cubic centimeter.
(iv) Other form	2 fibres/cubic centimeter.
(b) Mica	705 mppcm
(c) Mineral wool fibre	10 mg/m ³
(d) Perlite	1060 mppcm
(e) Portland cement	1060 mppcm
(f) Soap stone	705 mppcm
(g) Talc (nonobosti form)	705 mppcm
(h) Talc (fibrous)	Same limits as for asbestos
(i) Tromolite	Same limits as for asbestos
3. Coal dust	
(1) For airborne dust having less than 5% silicon dioxide by weight	2 mg/m ³
(2) For airborne dust having over 5% silicon dioxide.	Same limit as prescribed by formula in item (2) against quartz.

TABLE 3.

Substance	Permissible limit of exposure	
	ppm	mg/m ³
Acetic anhydride	5	20
O-Dichlorobenzene	50	300
Formaldehyde	2	3
Hydrogen chloride	5	7
Manganese & Compounds (as Mn)	..	5
Nitrogen dioxide	5	9
Nitroglycerin-skin	0.2	2
Potassium Hydroxide	..	2
Sodium hydroxide	..	2
2,4,6-Trinitrotoluene(TNT)	..	0.5

5. In form No.22 prescribed under rule 140 under heading special provision at entry No. 37 after item No. (v) following new item shall be inserted, namely :-

“(vi) Leakage incidence of any toxic gas or other hazardous substances.”

[No. F.4(1) Shram/86]

By Order of the Governor,

के. एल. कोचर,
Special Secretary to Government.