

# THE MANUFACTURE, STORAGE AND IMPORT OF HAZARDOUS CHEMICALS RULES, 1989<sup>1</sup>

In exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules, namely :-

**1. Short title and commencement.**—(1) These rules may be called the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.

(2) They shall come into force on the date of their publication in the Official Gazette.

**2. Definitions.**— In these rules, unless the context otherwise requires,—

- (a) “Act” means the Environment (Protection) Act, 1986 (29 of 1986);
- (b) “Authority” means an authority mentioned in column 2 of Schedule 5;
- (c) “export” with its grammatical variations and cognate expression, means taking out of India to a place outside India;
- (d) “exporter” means any person under the jurisdiction of the exporting country and includes the exporting country, who exports hazardous chemicals;
- (e) “hazardous chemical” means,—
  - (i) any chemical which satisfies any of the criteria laid down in Part I of <sup>2</sup>[Schedule 1 or] listed in column 2 of Part II of this Schedule;
  - (ii) any chemical listed in column 2 of Schedule 2;
  - (iii) any chemical listed in column 2 of Schedule 3;
- (f) “import”, with its grammatical variations and cognate expression, means bringing into India from a place outside India;
- (g) “importer” means an occupier or any person who imports hazardous chemicals;
- (h) “industrial activity” means.—

1. *Vide* S.O. 966 (E), dated 27th November, 1989, published in the Gazette of India, Extra., Pt. II, Sec. 3 (ii), dated 27th November, 1989, and corrected by S.O. 115(E), dated 5th February, 1990, published in the Gazette of India, Extra., Pt. II, Sec. 3(ii) dated 5th February, 1990.

2. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

- (i) an operation or process carried out in an industrial installation referred to in Schedule 4 involving or likely to involve one or more hazardous chemicals and includes on-site storage or onsite transport which is associated with that operation or process, as the case may be; or
- (ii) isolated storage; or
- (iii) pipeline;
- (i) "isolated storage" means storage of a hazardous chemical, other than storage associated with an installation on the same site specified in Schedule 4 where that storage involves at least the quantities of that chemical set out in Schedule 2;
- <sup>1</sup>[(j) "major accident" means - an incident involving loss of life inside or outside the installation, or ten or more injuries inside and/ or one or more injuries outside or release of toxic chemicals or explosion or fire or spillage of hazardous chemicals resulting in on-site or off-site emergencies of damage to equipment leading to stoppage of process or adverse affects to the environment;
- (ja) "major accident hazards (MAH) installations" means - isolated storage and industrial activity at a site handling (including transport through carrier or pipeline) of hazardous chemicals equal to or, in excess of the threshold quantities specified in, column 3 of Schedules 2 and 3 respectively;]
- (k) "pipeline" means a pipe (together with any apparatus and works associated therewith) or system of pipes (together with any apparatus and works associated therewith) for the conveyance of a hazardous chemical other than a flammable gas as set out in column 2 of Part II of Schedule 3 at a pressure of less than eight bars absolute; the pipeline also includes inter-state pipelines;
- (l) "Schedule" means Schedule appended to these rules;
- (m) "site" means any location where hazardous chemicals are manufactured or processed, stored, handled, used, disposed of and includes the whole of an area under the control of an occupier and includes pier, jetty or similar structure whether floating or not;
- (l) "Threshold quantity" means.—
  - (i) in the case of a hazardous chemical specified in column 2 of Schedule 2, the quantity of that chemical specified in the corresponding entry in columns 3 and 4;

- (ii) in the case of a hazardous chemical specified in column 2 of Part I of Schedule 3, the quantity of that chemical specified in the corresponding entry in columns 3 and 4 of that Part.
- (iii) in the case of substances of a class specified in column 2 of Part II or Schedule 3, the total quantity of all substances of that class specified in the corresponding entry in columns 3 and 4 of that part.

<sup>1</sup>[**3. Duties of authorities.**— The concerned Authority shall,—

- (a) inspect the industrial activity at least once in a calendar year;
- (b) except where such authority is the Ministry of Environment and Forests, annually report on the compliance of the rules by the occupiers to the Ministry of environment and Forests through appropriate channel;
- (c) subject to the other provisions of these rules, perform the duties specified in column 3 of Schedule 5.]

**4. General responsibility of the occupier during industrial activity.**—

(1) These rules shall apply to,—

- (a) an industrial activity in which a hazardous chemical, which satisfies any of the criteria laid down in Part I of Schedule I <sup>2</sup>[or listed] in column 2 of Part II of this Schedule is, or may be, involved; and
- <sup>2</sup>[(b) isolated storage of a hazardous chemical listed in Schedule 2 in a quantity equal to or more than the threshold quantity specified in column 3, thereof.]

(2) An occupier who has control of an industrial activity in terms of subrule (1) shall provide evidence to show that he has,—

- (a) identified the major accident hazards; and
- (b) taken adequate steps to—
  - (i) prevent such major accidents and to limit their consequences to persons and the environment;
  - (ii) provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety.

**5. Notification of major accident.**—(1) Where a major accident occurs on a site or in a pipeline, the occupier shall [within 48 hours notify] the

1. Subs. by S.O. 2882 (E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

concerned authority as identified in Schedule 5 of that accident, and furnish thereafter to the concerned authority a report relating to the accidents in instalments, if necessary, in Schedule 6.

(2) The concerned authority shall on receipt of the report in accordance with sub-rule (1) of this rule, shall undertake a full analysis of the major accident and send the <sup>2</sup>[requisite information within 90 days to the Ministry] of Environment and Forests through appropriate channel.

<sup>1</sup>[(3) An occupier shall notify to the concerned Authority, steps taken to avoid any repetition of such occurrence on a site.]

<sup>2</sup>[(4) The concerned Authority shall compile information regarding major accidents and make available a copy of the same to the Ministry of Environment and Forests through appropriate channel.

(5) The concerned Authority shall in writing inform the occupier, of any lacunae which in its opinion needs to be rectified to avoid major accidents.]

**6. Industrial activity to which rules 7 to 15 apply.**—(1) Rules 7 to 15 shall apply to,

- (a) an industrial activity in which there is involved a quantity of a hazardous chemical listed in column 2 of Schedule 3 which is equal to or more than the quantity specified in the entry for that chemical in columns 3 and 4 (rules 10-12 only for column 4); and
- (b) isolated storage in which there is involved a quantity of a hazardous chemical listed in column 2 of Schedule 2 which is equal to or more than the quantity specified in the entry for that chemical in <sup>3</sup>[columns 3 and 4 (rules 10-12 only for column 4)].

(2) For the purposes of rules 7 to 15.

- (a) “new industrial activity” means an industrial activity which,
  - (i) commences after the date of coming into operation of these rules; or
  - (ii) if commenced before that date, is an industrial activity in which a modification has been made which is likely to cover major accident hazards, and that activity shall be deemed to have commenced on the date on which the modification was made;

1. Subs. by S.O. 2882 (E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Ins. by 2882 (E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

3. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

- (b) an “existing industrial activity” means an industrial activity which is not a new industrial activity.

**7. <sup>1</sup>[Approval and Notification of sites].**—(1) An occupier shall not undertake any industrial activity <sup>2</sup>[unless he has been granted an approval for undertaking such an activity and has submitted] a written report to the concerned Authority containing the particulars specified in Schedule 7 at least 3 months before commencing that activity or before such shorter time as the concerned Authority may agree and for the purposes of this paragraph, an activity in which subsequently there is or is liable to be a threshold quantity or more of an additional hazardous chemical shall be deemed to be a different activity and shall be notified accordingly.

<sup>2</sup>[(2) The concerned Authority within 60 days from the date of receipt of the report, shall approve the report submitted and on consideration of the report if it is of the opinion that contravention of the provisions of the Act or the rules made thereunder has taken place, it shall issue notice under rule 19.]

**8. Updating of the site notification following changes in the threshold quantity.**—Where an activity has been reported in accordance with rule 7(1) and the occupier makes a change in it (including an increase or decrease in the maximum threshold quantity of a hazardous chemical to which this rule applies which is or is liable to be at the site or in the pipeline or at the cessation of the activity) which affects the particulars specified in that report or any subsequent report made under this rule, the occupier shall forthwith furnish a further report to the concerned authority.

**9. Transitional provisions.**—Where,—

- (a) at the date of coming into operation of these rules, an occupier is in control of an existing industrial activity which is required to be reported under rule 7(1); or
- (b) within six months after that date, an occupier commences any such new industrial activity, it shall be a sufficient compliance with that rule if he reports to the concerned authority as per the particulars in Schedule 7 within 3 months after the date of coming into operation of these rules or within such longer time as the concerned authority may agree in writing.

**10. <sup>1</sup>[Safety reports and safety audit reports].**—(1) Subject to the following paragraphs of this rule, an occupier shall not undertake any industrial activity to which this rule applies, unless he has prepared a safety report on that industrial activity containing the information specified in Schedule 8 and

1. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

2. Subs. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

has sent a copy of that report to the concerned authority at least ninety days before commencing that activity.

(2) In the case of a new industrial activity which an occupier commences, or by virtue of sub-rule (2) (a) (ii) of rule 6 is deemed to commence, within 6 months after coming into operation of these rules, it shall be a sufficient compliance with sub-rule (1) of this rule if the occupier sends to the concerned authority a copy of the report required in accordance with that sub-rule within ninety days after the date of coming into operation of these rules.

<sup>1</sup>[(3) In case of an existing industrial activity, the occupier shall prepare a safety report in consultation with the concerned authority and submit the same within one year from the date of the commencement of the Manufacture, Storage and Import of Hazardous Chemicals (Amendment) Rules, 1994, to the concerned Authority.]

<sup>2</sup>[(4) After the commencement of the Manufacture, Storage and Import of Hazardous Chemicals (Amendment) Rules, 1994, the occupiers of both the new and the existing industrial activities shall carry out an independent safety audit of the respective industrial activities with the help of an expert, not associated with such industrial activities.

(5) The occupier shall forward a copy of the auditor's report along with his comments, to the concerned Authority within 30 days after the completion of such Audit.

(6) The occupier shall update the safety audit report one a year by conducting a fresh safety audit and forward a copy of it with his comments thereon within 30 days to the concerned Authority.

(7) The concerned Authority may, if it deems fit, issue improvement notice under rule 19 withi.w. 45 days of the submission of the said report]

**11. Updating of reports under rule 10.—**(1) Where an occupier has made a safety report in accordance with sub-rule (1) of rule 10 he shall not make any modification to the industrial activity to which that safety report relates which could materially affect the particulars in that report, unless he has made a further report to take account of those modifications and has sent a copy of that report to the concerned Authority at least 90 days before making those modifications.

(2) Where an occupier has made a report in accordance with rule 10 and sub-rule (1) of this rule and that industrial activity is continuing, the occupier shall within three years of the date of the last such report, make a further report which shall have regard in particular to new technical knowledge which has affected the particulars in the previous report relating to safety and hazard

1. Subs. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Ins. by 2882 (E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

assessment, and shall within 30 days <sup>1</sup>[\*\*\*] send a copy of the report to the concerned Authority.

<sup>2</sup>**12. Requirements for further information to be sent to the authority.**— Where, in accordance with rule 10, an occupier has sent a safety report relating to an industrial activity to the concerned authority, the concerned authority may, by a notice served on the occupier, require him to provide such additional information as is specified in the notice and the occupier shall send that information to the concerned Authority within 90 days.]

**13. Preparation of on-site emergency plan by the occupier.**—(1) An occupier shall prepare and keep up-to-date <sup>2</sup>[an on-site emergency plan containing details specified in Schedule 11 and detailing how major accidents will be dealt with on the site on which the industrial activity is carried on and that plan shall include the name of the person who is responsible for safety on the site and the names of those who are authorised to take action in accordance with the plan in case of an emergency.

(2) The occupier shall ensure that the emergency plan prepared in accordance with sub-rule (1) takes into account any modification made in the industrial activity and that every person on the site who is affected by the plan is informed of its relevant provisions.

(3) The occupier shall prepare the emergency plan required under sub rule (1),—

- (a) in the case of a new industrial activity, before that activity is commenced;
- (b) in the case of an existing industrial activity within 90 days of coming into operation of these rules.

<sup>3</sup>[(4) The occupier shall ensure that a mock drill of the on-site emergency plan is concluded every six months;

(5) A detailed report of the mock drill concluded under sub-rule (4) shall be made immediately available to the concerned Authority.]

**14. Preparation of off-site emergency plans by the authority.**—(1) It shall be the duty of the concerned Authority as identified in column 2 of Schedule 5 to prepare and keep up-to-date <sup>1</sup>[an adequate off-site emergency plan containing particulars specified in Schedule 12 and detailing] how emergencies relating to a possible major accident on that site will be dealt with and in preparing that plan the concerned authority shall consult the occupier and such other persons as it may deem necessary.

1. Omitted by 5.0. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Subs. by 5.0. 2882 (E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

3. Ins. by 5.0. 2882(f), dated 3rd October, 1994 (w.e.f. 22-10-1994).

(2) For the purpose of enabling the concerned Authority to prepare the emergency plan required under sub-rule (1), the occupier shall provide the concerned Authority with such information relating to the industrial activity under his control as the concerned Authority may require, including the nature, extent and likely effects off-site of possible major accidents and the authority shall provide the occupier with any information from the off-site emergency plan which relates to his duties under rule 13.

(3) The concerned authority shall prepare its emergency plan required under sub-rule (1).

(a) in the case of a new industrial activity, before that activity is commenced;

(b) in the case of an existing industrial activity, within six months of coming into operation of these rules.

[(4) The concerned Authority shall ensure that a rehearsal of the off-site emergency plan is concluded at least once in a calendar year.]

**15. Information to be given to persons liable to be affected by a major accident.**—(1) The occupier shall take appropriate steps to inform persons outside the site either directly or through District Emergency Authority who are likely to be in an area which may be affected by a major accident about,

(a) the nature of the major accident hazard; and

(b) the safety measures and the “Dos” and “Don’ts” which should be adopted in the event of a major accident.

(2) The occupier shall take the steps required under sub-rule (1) to inform persons about an industrial activity, before that activity is commenced, except in the case of an existing industrial activity in which case the occupier shall comply with the requirements of sub-rule (1) within 90 days of coming into operation of these rules.

**16. Disclosure of information.**—Where for the purpose of evaluating information notified under rule 5 or 7 to IS, the concerned Authority discloses that information to some other person, that other person shall not use that information for any purpose except for the purpose of the concerned Authority disclosing it, and before disclosing the information the concerned authority shall inform that other person of his obligations under these paragraphs.

**17. Collection, development and dissemination of information.**—(1) This rule shall apply to an industrial activity in which a hazardous chemical

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2. Ins. by S.O. 2882 (E), dated 3rd October, 1994 (w.e.f. 22-10-1994)

which satisfies any of the criteria laid down in Part I of Schedule 1 <sup>1</sup>[or listed] in column 2 of Part II of this Schedule is or may be involved.

(2) An occupier, who has control of an industrial activity in terms of subrule (1) of this rule, shall arrange to obtain or develop information in the form of safety data-sheet as specified in Schedule 9. The information shall be accessible upon request for reference.

(3) The occupier while obtaining or developing a safety data-sheet as specified in Schedule 9 in respect of a hazardous chemical handled by him shall ensure that the information is recorded accurately and reflects the scientific evidence used in making the hazard determination. In case any significant information regarding hazard of a chemical is available, it shall be added to the material safety data-sheet as specified in Schedule 9 as soon as practicable.

(4) Every container of a hazardous chemical shall be clearly labelled or marked to identify,

- (a) the contents of the container;
- (b) the name and address of the manufacturer or importer of the hazardous chemical;
- (c) the physical, chemical and toxicological data as per the criteria given at Part I of Schedule 1.

(5) In terms of sub-rule (4) of this rule, where it is impracticable to label a chemical in view of the size of the container or the nature of the package, provision should be made for other effective means like tagging or accompanying documents.

**18. Import of hazardous chemicals.**—(1) This rule shall apply to a chemical which satisfies any of the criteria laid down in Part I of Schedule 1 <sup>1</sup>[or listed] in column 2 of Part II of this Schedule.

(2) Any person responsible for importing hazardous chemicals in India shall provide <sup>2</sup>[before 30 days or as reasonably possible but not later than] the date of import to the concerned authorities as identified in column 2 of Schedule 5 the information pertaining to,

- (i) the name and address of the person receiving the consignment in India;
- (ii) the port of entry in India; (iii) mode of transport from the exporting country to India; (iv) the quantity of chemical(s) being imported; and (v) complete product safety information.

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1. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

2. Subs. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

<sup>1</sup>[(3) If the concerned authority of the State is satisfied that the chemical being imported is likely to cause major accidents, it may direct the importer to take such safety measures as the concerned Authority of the State may deem appropriate.]

<sup>2</sup>[(3A) In case the concerned Authority of the State is of the opinion that the chemical should not be imported on safety or on environmental considerations, such Authority may direct stoppage of such import.]

(4) The concerned authority at the State shall simultaneously inform the concerned Port Authority to take appropriate steps regarding safe handling and storage of hazardous chemicals while off-loading the consignment within the port premises.

(5) Any person importing hazardous chemicals shall maintain the records of the hazardous chemicals imported as specified in Schedule 10 and the records so maintained shall be open for inspection by the concerned Authority at the State or the Ministry of Environment and Forests or any officer appointed by them in this behalf.

(6) The importer of the hazardous chemical or a person working on his behalf shall ensure that transport of hazardous chemicals from port of entry to the ultimate destination is in accordance with the Central Motor Vehicles Rules, 1989, framed under the provisions of the Motor Vehicles Act, 1988.

**19. Improvement notices.**—(1) If the concerned Authority is of the opinion that a person has contravened the provisions of these rules, the concerned Authority shall serve on him a notice (in this para referred to as "an improvement notice") requiring that person to remedy the contravention or, as the case may be, <sup>1</sup>[the matters occasioning it within 45 days].

(2) A notice served under sub-rule (1) shall clearly specify the measures to be taken by the occupier in remedying the said contraventions.

**20. Power of the Central Government to modify the Schedules.**—The Central Government may, at any time, by notification in the Official Gazette, make suitable changes in the Schedules.

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1. Subs. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Ins. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

3. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

<sup>3</sup>[SCHEDULE 1

[See rule 2e(i), 4(1)(a), 4(2), 17 and 18]

**PART I**

- (a) **Toxic Chemicals:** Chemicals having the following values of acute toxicity and which owing to their physical and chemical properties, are capable of producing major accidents hazards:

S. No.	Toxicity	Oral toxicity LD50(mg/kg)	Dermal toxicity LD50(mg/kg)	Inhalation toxicity LC50/(mg/l)
1.	Extremely toxic	>5	<40	<0.5
2.	Highly toxic	>5-50	>40-200	<0.5-2.0
3.	Toxic	>50-200	>200-1000	>2-10

**(b) Flammable Chemicals:**

- (i) *Flammable gases:* Gases which at 20°C and at standard pressure of 101.3 KPa are:

- (a) ignitable when in a mixture of 13 per cent or less by volume with air, or  
 (b) have a flammable range with air of at least 12 percentage point regardless of the lower flammable limits.

**Note:**—The flammability shall be determined by tests or by calculation in accordance with methods adopted by International Standards Organisation ISO Number 10156 of 1990 or by Bureau of Indian Standards ISI Number 1446 of 1985.

- (ii) *Extremely flammable liquids:* Chemicals which have flash point lower than or equal to 23°C and boiling point less than 35°C.  
 (iii) *Very highly flammable liquids:* Chemicals which have a flash point lower than or equal to 23°C and initial boiling point higher than 35°C.  
 (iv) *Highly flammable liquids:* Chemicals which have a flash point lower than or equal to 60°C but higher than 23°C.  
 (v) *Flammable liquids:* Chemicals which have a flash point higher than 60°C lower than 90°C.

- (c) **Explosives:** explosives means a solid or liquid or pyrotechnic substance (or a mixture of substances) or an article.

- (a) which is in itself capable of chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings;  
 (b) which is designed to produce an effect by heat, light, sound, gas or smoke, or a combination of these as the result of non-detonative self sustaining exothermic chemical reaction.

## PART II

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
1	Acetaldehyde	33.	Ammonium nitrate
2	Acetic acid	34.	Ammonium nitrite
3	Acetic anhydride	35.	Ammonium picrate
4	Acetone	36.	Anabasine
5	Acetone cyanohydrin	37.	Aniline
6	Acetone thiosemicarbazide	38.	Aniline 2,4,6, - Trimethyl
7	Acetonitrile	39.	Anthraquinone
8	Acetylene	40.	Antimony pentafluoride
9	Acetylene tetra chloride	41.	Antimycin A
10	Acrolein	42.	ANTU
11	Acrylamide	43.	Arsenic pentoxide
12	Acrylonitrile	44.	Arsenic trioxide
13	Adiponitrile	45.	Arsenous trichloride
14	Aldicarb	46.	Arsine
15	Aldrin	47.	Asphalt
16	Allyl alcohol	48.	Azinpho-ethyl
17	Allyl amine	49.	Azinphos methyl
18	Allyl chloride	50.	Bacitracin
19	Aluminium (powder)	51.	Barium azide
20	Aluminium azide	52.	Barium nitrate
21	Aluminium borohydride	53.	Barium nitride
22	Aluminium chloride	54.	Benzal chloride
23	Aluminium fluoride	55.	Benzenamine, 3- Trifluoromethyl
24	Aluminium phosphide	56.	Benzene
25	Amino diphenyl	57.	Benzene sulfonyl chloride
26	Amino pyridine	58.	Benzene arsenic acid
27	Aminophenol-2	60.	Benzidine
28	Aminopterin	61.	Benzidine salts
29	Ammon	62.	Benzimidazole, 4,5-Dichloro-2 (Trifluoromethyl)
30	Ammon dialate	63.	Benzoquinone-P
31	Ammonia	64.	Benzotrichloride
32	Ammonium chloro platinate		

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
65.	Benzoyl chloride	95.	Butyl vinyl ether
66.	Benzoyl peroxide	96.	Butyl-n-mercaptan
67.	Benzyl chloride	97.	C.I. Basic green
68.	Beryllium (powder)	98.	Cadmium oxide
69.	Bicyclo (2,2,1) Heptane-2 carbonitrile	99.	Cadmium stearate
70.	Biphenyl	100.	Calcium arsenate
71.	Bis (2-chloroethyl) sulphide	101.	Calcium carbide
72.	Bis (Chloromethyl) Ketone	102.	Calcium cyanide
73.	Bis (Tert-butyl peroxy) cyclohexane	103.	Camphechlor (Toxaphene)
74.	Bis (Terbutylperoxy) butane	104.	Cantharidin
75.	Bis (2,4,6-Trinitrophenylamine)	105.	Captan
76.	Bis (Chloromethyl) Ether	106.	Carbachol chloride
77.	Bismuth and compounds	107.	Carbaryl
78.	Bisphenol-A	108.	Carbofuran (Furadan)
79.	Bitoscanate	109.	Carbon tetrachloride
80.	Boron Powder	110.	Carbon disulphide
81.	Boron trichloride	111.	Carbon monoxide
82.	Boron trifluoride	112.	Carbophenothion
83.	Boron trifluoride comp. With methylether, 1:1	113.	Carvone
84.	Bromine	114.	Cellulose nitrate
85.	Bromine pentafluoride	115.	Chloroacetic acid
86.	Bromo chloro methane	116.	Chlordane
87.	Bromodialone	117.	Chlorofenvinphos
88.	Butadiene	118.	Chlorinated benzene
89.	Butane	119.	Chlorine
90.	Butanone-2	120.	Chlorine oxide
91.	Butyl amine tert	121.	Chlorine trifluoride
92.	Butyl glycidal ether	122.	Chlormephos
93.	Butyl isovalarate	123.	Chlormequat chloride
94.	Butyl peroxy maleate tert	124.	Chloroacetalchloride
		125.	Chloroacetadehyde lenetetranitramine
		126.	Chlororaniline-2

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
127.	Chloroaniline-4	160.	Cyclohexylamine
128.	Chlorobenzene	161.	Cyclohexane
129.	Chloroethyl chloroformate	162.	Cyclohexanone
130.	Chloroform	163.	Cycloheximide
131.	Chloroformyl morpholine	164.	Cyclopentadiene
132.	Chloromethane	165.	Cyclopentane
133.	Chloromethyl methylether	166.	Cyclotetramethy
134.	Chloromtrobenzene	167.	CYcloramethylenetrinnitranine
135.	Chlorophacinone	168.	Cypermethrin
136.	Chlorosulphonic acid	169.	DDT
137.	Chlorothiophos	170.	Decaborane (1:4)
138.	Chloroxuron	171.	Demeton
139.	Chromic acid	172.	Demeton S-Methyl
140.	Chromic chloride	173.	Di-n-propyl peroxydicarbonate (Cone = 80%)
141.	Chromium powder	174.	Dialifos
142.	Cobalt carbonyl	175.	Diazodinitrophenol
143.	Cobalt Nitrilmethylidyne compound	176.	Dibenzyl peroxydicarbonate (Cone > = 90%)
144.	Cobalt (powder)	177.	Diborane
145.	Colchicine	178.	Dichloroacetylene
146.	Copper and compounds	179.	Dichlorobenzalkonium chloride
147.	Copperoxychloride	180.	Dichloroethyl ether
148.	Coumafuryl	181.	Dichloromethyl phenylsilane
149.	Coumaphos	182.	Dichlorophenol-2.6
150.	Coumatertralyl	183.	Dichlorophenol-2.4
151.	Crimidine	184.	Dichlorophenoxyacetic acid
152.	Crotenaldehyde	185.	Dichloropane-2.2
153.	Crotonaldehyde	186.	Dichlorosalicylic acid-3.5
154.	Cumene	187.	Dichlorvos (DDVP)
155.	Cyanogen bromide	188.	Dicrotophos
156.	Cyanogen iodide	189.	Dieldrin
157.	Cyanophos	190.	Diepoxy butane
158.	Cyanothoate	191.	Diethyl carbamazine citrate
159.	Cyanuric fluoride		

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
192.	Diethyl chlorophosphate	233.	Disufoton
193.	Diethyl ethanolamine	234.	Dithiazamine iodide
194.	Diethyl peroxydicarbonate (Cone = 30%)	235.	Dithiobiurate
195.	Diethyl phenylene diamine	236.	Endosulfan
196.	Diethylamine	237.	Endothion
197.	Diethylene glycol	238.	Endrin
198.	Diethylene glycol dinitrate	239.	Epichlorohydrine
199.	Diethylene triamine	240.	EPN
200.	Diethyleneglycol butyl ether	241.	Ergocalciferol
201.	Diglycidyl ether	242.	Ergotamine tartarate
202.	Digitoxin	243.	Ethanesulfonyl chooride, 2 chloro
203.	Dihydroperoxypropane (Conc>=30%)	244.	Ethanol 1-2 dichloracetate
204.	Diisobutyl peroxide	245.	Ethion
205.	Dimefox	246.	Ethoprophos
206.	Dimethoate	247.	Ethyl acetate
207.	Dimethyl dichlorosilane	248.	Ethyl alcohol
208.	Dimethyl hydrazine	249.	Ethyl benzene
209.	Dimethyl nitrosoamine	250.	Ethyl bis amine
210.	Dimethyl P phenylene diamine	251.	Ethyl bromide
211.	Dimethyl phosphoramidi cyanidic acid (TABUM)	252.	Ethyl carbamate
212.	Dimethyl phosphorochloridothioate	253.	Ethyl ether
213.	Dimethyl sulfolane (DMS)	254.	Ethyl hexanol-2
214.	Dimethyl sulphide	255.	Ethyl mercaptan
215.	Dimethylamine	256.	Ethyl mercuric phosphate
216.	Dimthylaniline	257.	Ethyl methacrylate
217.	Dimethylcarbonylchloride	258.	Ethyl nitrate
218.	Dimetilan	259.	Ethyl thiocyanate
219.	Dinitro O-cresol	260.	Ethylamine
220.	Dinitrorphenol	261.	Ethylene
221.	Dinitrotoluene	262.	Ethylene chlorohydrine
222.	Dinoseb	263.	Ethylene dibromide
223.	Dinoterb	264.	Ethylene diamine
224.	Dioxane-p	265.	Ethylene diamine hydrochloride
225.	Dioxathion	266.	Ethylene flourohydrine
226.	Dioxine N	267.	Ethylene glycol
227.	Diphacinone	268.	Ethylene glycol dinitrate
228.	Diphosphoramide octamethyl	269.	Ethylene oxide
229.	Diphenyl methane di-isocynate (MDI)	270.	Ethylenimine
230.	Dipropylene Glycol Butyl ether	271.	Ethylene di chloride
231.	Dipropylene glycolmethyl ether	272.	Femamiphos
232.	Disec-butyl peroxydicarbonate (Cone> 80%)	273.	Femitrothion
		274.	Fensulphothion
		275.	Fluemetll
		276.	Fluorine
		277.	Fluoro-hydroxy butyric acid amid salt and ester

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
278.	Fluoroacetamide	314.	Hydrogen
279.	Fluoroacetic acid amide salts and esters	315.	Hydrogen bromide
280.	Fluoroacetyl chloride	316.	Hydrogen cyanide
281.	Fluorobutyric acid amide salt esters	317.	Hydrogen peroxide
282.	Fluorocrotonic acid amides salts esters	318.	Hydrogen peroxide
283.	Fluorouracil	319.	Hydroquinone
284.	Fonofos	320.	Indene
285.	Formaldehyde	321.	Indium powder
286.	Formetanate hydrochloride	322.	Indomethacin
287.	Formic acid	323.	Iodine
288.	Formoparanate	324.	Iridium tetrachloride
289.	Formothion	325.	Ironpentacarbonyl
290.	Fosthiotan	326.	Iso benzan
291.	Fuberidazole	327.	Isoamyl alcohol
292.	Furan	328.	Isobutyl alcohol
293.	Gallium Trichloride	329.	Isobutro nitrile
294.	Glyconitrile (Hydroxyacetonitrile)	330.	Isocyanic acid 3 4-dichlorophenyl ester
295.	Guanyl-4-nitrosaminoguylnyl-1-tetrazene	331.	Isodrin
296.	Heptachlor	332.	Isofluorophosphate
297.	Hexa methyl-terta-oxyacyclonoate (Cone 75%)	333.	Isophorone diisocyanate
298.	Hexachlorobenzene	334.	Isopropyl alcohol
299.	Hexachlorocyclohexan (Lindane)	335.	Isopropyl chlorocarbonate
300.	Hexa chlorocyclopentadiene	336.	Isopropyl formate
301.	Hexachlorodibenzo- dioxin	337.	Isopropyl methyl pyroazolyl dimethyl carbamate
302.	Hexachloronaphthalene	338.	Juglone (5-Hydroxy Napthalene-1, 4 dione)
303.	Hexafluoropropanone sesquiterate	339.	Ketene
304.	Hexamethyl phosphoroamide	340.	Lactonitrile
305.	Hexamethylene diamine N N . dimethyl	341.	Lead arsenite
306.	Hexane	342.	Lead at high temp (molten)
307.	Hexanitrostilbene 2 2 4 4 6 6	343.	Lead azide
308.	Hexene	344.	Lead styphanate
309.	Hydrogen selenide	345.	Leptophos
310.	Hydrogen sulphide	346.	Lenisite
311.	Hydramine	347.	Liquified petroleum gas
312.	Hydramine nitrate	348.	Lithium hydride
313.	Hydrochloric acid (Gas)	349.	N-Dinitrobenzene
		350.	Magnesium powder or ribbon
		351.	Malathion
		352.	Maleic anhydride

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
353.	Malononitrile	394.	Methyl phenacpton
354.	Manganese Tricarbonyl cyclopentadiene	395.	Methyl phosphonic dichloride
355.	Mechlor ethamine	396.	Methyl thiocyanate
356.	Mephospholan	397.	Methyl trichlorosilane
357.	Mercuric chloride	398.	Methyl vinyl ketone
358.	Mercuric oxide	399.	Methylene bis (2-chloroaniline)
359.	Mercury acetate	400.	Methylene chloride
360.	Mercury fulminate	401.	Methylenebis-44(2-chloroaniline)
361.	Mercury methyl chloride	402.	Metolcarb
362.	Mesitylene	403.	Mevinphos
363.	Methacrolein diacetate	404.	Mezacarbate
364.	Methacrylic anhydride	405.	Mitomycin C
365.	Methacrylonitrile	406.	Molybdenum powder
366.	Methacryloyl oxyethyl isocyanate	407.	Monocrotophos
367.	Methanidophos	408.	Morphoine
368.	Methane	409.	Muscinol
369.	Methanesulphonyl fluoride	410.	Mustard gas
370.	Methidathion	411.	N-Butyl acetate
371.	Methiocarb	412.	N-Butyl alcohol
372.	Methonyl	413.	N-Hexane
373.	Methoxy ethanol (2-methyl cellosolve)	414.	N-Methyl-N, 2, 4, 6 Tetranitroaniline
374.	Methoxyethyl mercuric acetate	415.	Naphtha
375.	Methacryloyl chloride	416.	Naptha solvent
376.	Methyl 2-chloroacrylate	417.	Naphthalene
377.	Methyl alcohol	418.	Naphthyl amine
378.	Methyl amine	419.	Nickel carbonyl/nickel tetracarbonyl
379.	Methyl bromide (Broinomethane)	420.	Nickel powder
380.	Methyl chloride	421.	Nicotine
381.	Methyl chloroform	422.	Nicotine sulphate
382.	Methyl chloroformate	423.	Nitric acid
383.	Methyl cyclohexane	424.	Nitric oxide
384.	Methyl disulphide	425.	Nitrobenzene
385.	Methyl ethyl ketone peroxide (Cone. 60%)	426.	Nitrocellulose (dry)
386.	Methyl formate	427.	Nitrochlorobenzene
387.	Methyl hydrazine	428.	Nitrocyclohexane
388.	Methyl isobutyl ketone	429.	Nitrogen
389.	Methyl isocyanate	430.	Nitrogen dioxide
390.	Methyl isothiocyanate	431.	Nitrogen oxide
391.	Methyl mercuric dicyanamide	432.	Nitrogen trifluouide
392.	Methyl Mercaptan	433.	Nitroglycerine
393.	Methyl Methacrylate	434.	Nitropropane-1
		435.	Nitropropane-2

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
436.	Nitroso dimethylamine	473.	Pentachloro naphthalene
437.	Nonane	474.	Pentadecyl amine
438.	Norbormide	475.	Pentaerythritol tetranitrate
439.	O-Cresol	476.	Pentane
440.	O-Nitro Toluene	477.	Pentanone
441.	O-Toludine	478.	Perchloric acid
442.	O-Xylene	479.	Perchloroethylene
443.	O/P Nitroaniline	480.	Peroxyacetic acid
444.	Oleum	481.	Phenol
445.	OO-Diethyl-S ethyl sulph. methyl phospho	482.	Phenol, 2, 2-thiobis (4, 6-Dichloro)
446.	OO-Diethyl-S propylthio methyl phosphodithioate	483.	Phenol, 2 2-thiobis (4 chloro 6 methyl phenol)
447.	OO-Diethyl-S ethylsulphinylmethylphosphorothioate	484.	Phenol, 3-(1-methyl ethyl)-methylcarbamate
448.	OO-Diethyl-S ethylsulphonylmethylphosphorothioate	485.	Phenyl hydrazine hydrochloride
449.	OO-Diethyl-S ethylthiomethylphosphorothioate	486.	Phenyl mercury acetate
450.	Organo rhodium complex	487.	Phenyl silatrane
451.	Orotic acid	488.	Phenyl thiourea
452.	Osmium tetroxide	489.	Phenylene P-diamine
453.	Oxabain	490.	Phorate
454.	Oxamyl	491.	Phosazetin
455.	Oxetane, 3, 3.-bis(chloromethyl)	492.	Phosfolan
456.	Oxidiphenoxarsine	493.	Phosgene
457.	Oxy disulfoton	494.	Phosmet
458.	Oxygen (liquid)	495.	Phosphamidon
459.	Oxygen difluoride	496.	Phosphine
460.	Ozone	497.	Phosphoric acid
461.	P-nitrophenol	498.	Phosphoric acid (4-methyl thio) phenyl
462.	Paraffin	499.	Phosphorothioic acid dimethyl S(2-Bis) Ester
463.	Paraoxon (Diethyl 4 Nitrophenyl Phosphate)	500.	Phosphorothioic acid methyl (ester)
464.	Paraquat	501.	Phosphorothioic acid, OO Dimethyl S-(2-methyl)
465.	Paraquat methosulphate	502.	Phosphorothioic, methyl-ethyl ester
466.	Parathion	503.	Phosphorous
467.	Parathion methyl	504.	Phosphorous oxychloride
468.	Paris green	505.	Phosphorous pentoxide
469.	Penta borane	506.	Phosphorous trichloride
470.	Penta chloro ethane	507.	Phosphorous penta chloride
471.	Penta chloro phenol	508.	Phthalic anhydride
472.	Pentabromophenol	509.	Phylloquinone

**S. No. List of Hazardous Chemicals**

- 510. Physostigmine
- 511. Physostigmine salicylate (1:1)
- 512. Picric acid (2,4,6-trinitrophenol)
- 513. Picrotoxin
- 514. Piperidine
- 515. Piprotal
- 516. Pirinifos-ethyl
- 517. Platinous chloride
- 518. Platinum tetrachloride
- 519. Potassium arsenite
- 520. Potassium chlorate
- 521. Potassium cyanide
- 522. Potassium hydroxide
- 523. Potassium nitride
- 524. Potassium nitrite
- 525. Potassium peroxide
- 526. Potassium silver cyanide
- 527. Powdered metals and mixtures
- 528. Promecarb
- 529. Promurit
- 530. Propanesultone
- 531. Propargyl alcohol
- 532. Propargyl bromide
- 533. Propen-2-chloro-1,3-dioudiacetate
- 534. Propiolactone beta
- 535. Propionitrile
- 536. Propionitrile, 3-chloro
- 537. Propiophenone, 4-amino
- 538. Propyl chloroformate
- 539. Propylene dichloride
- 540. Propylene glycol, allylether
- 541. Propylene imine
- 542. Propylene oxide
- 543. Prothoate
- 544. Pseudosumene
- 545. Pyrazoxon
- 546. Pyrene
- 547. Pyridine
- 548. Pyridine, 2-methyl-3-vinyl
- 549. Pyridine, 4-nitro-1-oxide
- 550. Pyridine, 4-nitro-1-oxide
- 551. Pyriminil
- 552. Quinaliphos

**5S. No. List of Hazardous Chemicals**

- 553. Quinone
- 554. Rhodium trichloride.
- 555. Salcomine
- 556. Sarin
- 557. Selenious acid
- 558. Selenium Hexafluoride
- 559. Selenium oxychloride
- 560. Semicarbazide hydrochloride
- 561. Silane (4-amino butyl) diethoxymeth
- 562. Sodium
- 563. Sodium anthra-quinone-1-sulphonate
- 564. Sodium arsenate
- 565. Sodium arsenite
- 566. Sodium azide
- 567. Sodium cacodylate
- 568. Sodium chlorate
- 569. Sodium cyanide
- 570. Sodium fluoro-acetate
- 571. Sodium hydroxide
- 572. Sodium pentachloro-phenate
- 573. Sodium picramate
- 474. Sodium selenate
- 575. Sodium selenite
- 576. Sodium sulphide
- 577. Sodium tellorite
- 578. Stannane acetoxy triphenyl
- 579. Stibine (Antimony hydride)
- 580. Strychnine
- 581. Strychnine sulphate
- 582. Styphinic acid (2,4,6-trinitrorer sorcinol)
- 583. Styrene
- 584. Sulphotec
- 585. Sulphoxide, 3-chloropropyl octyl
- 586. Sulphur dichloride 23
- 587. Sulphur dioxide
- 588. Sulphur monochloride
- 589. Sulphur tetrafluoride
- 590. Sulphur trioxide
- 591. Sulphuric acid
- 592. Tellurium (Powder)
- 593. Tellurium hexafluoride

## S. No. List of Hazardous Chemicals

594. TEPP (Tetraethyl pyrophosphate)  
 595. Terbufos  
 596. Tert-Butyl alcohol  
 597. Tert-Butyl peroxy cabonate  
 598. Tert-Butyl peroxy isopropyl  
 599. Tert-Butyl peroxyacetate  
 (Conc>=70%)  
 600. Tert-Butyl peroxyvalate  
 (Conc>=77%)  
 601. Tert - Butyperoxyiso-buturate  
 602. Tetra hydrofuran  
 603. Tetra methyl lead  
 604. Tetra nitromethane  
 605. Tetra -chlorodibenzo-p -dioxin,  
 1,2,3,7,8, (TCDD)  
 606. Tetraethyl lead  
 607. Tetrafluoriethyne  
 608. Tetramethylene disulphotetramine  
 609. Thallic oxide  
 610. Thallium carbonate  
 611. Thallium sulphate  
 612. Thallous chloride  
 613. Thallous malonate  
 614. Thallous sulphate  
 615. Thiocarbazide  
 616. Thiocynamicacid, 2  
 (Benzothiazolyethio) methyl  
 617. Thiofamox  
 618. Thionieton  
 619. Thionazin  
 620. Thionyl chloride  
 621. Thiophenol  
 622. Thiosemicarbazide  
 623. Thiourea (2-chloro-phenyl)  
 624. Thiourea (2-methyl phenyl)  
 625. Tirpate (2,4-dimethyl-1, thiolane)  
 626. Titanium powder  
 627. Titanium tetra-chloride  
 628. Toluene  
 629. Toluene 2,4-di isocyanate  
 630. Toluene, 2, 6-di isocyanate  
 631. Trans-1, 4-di chloro-butene  
 632. Tetrato anisole

## S. No. List of Hazardous Chemicals

633. Tri (Cyclohexyl) methylstannyl  
 1,2,4. triazole  
 634. Tri (Cyclohexyl) stannyl-1H-1,  
 2,3triazole  
 635. Triaminotrinitrobenzene  
 636. Triamphos  
 637. Triazophos  
 638. Tribromophenol 2,4,6  
 639. Trichloro naphthalene  
 640. Trichloro chloromethyl silane  
 641. Trichloroacetyl chloride  
 642. Trichlorodichlorophenylsilane  
 643. Trichloroethyl silane  
 644. Trichloroethylene  
 645. Trichloromethane sulphenyl  
 chloride  
 646. Trichloronate  
 647. Trichlorophenol 2,3,6  
 648. Trichlorophenol 2,4,5  
 649. Trichlorophenyl silane  
 650. Trichlorophon  
 651. Triethoxy silane  
 652. Triethylamine  
 653. Triethylene melamine  
 654. Trimethyl chlorosilane  
 655. Trimethyl propane phosphite  
 656. Trimethyl tin chloride  
 657. Trinitro aniline  
 658. Trinitro benzene  
 659. Trinitro benzoic acid  
 660. Trinitro phenetole  
 661. Trinitro-m-cresol  
 662. Trinitrotoluene  
 663. Tri orthocresyl phosphate  
 664. Triphenyl tin chloride  
 665. Tris (2 -chloroethyl) amine  
 666. Trupentine  
 667. Uranium and its compounds  
 668. Valine mycin  
 669. Vanadium pentaoxide  
 670. Vinyl acetate monomer  
 671. Vinyl bromide  
 672. Vinyl chloride

S. No.	List of Hazardous Chemicals	S. No.	List of Hazardous Chemicals
673.	Vinyl cyclohexane dioxide	679.	Warfarin Sodium
674.	Vinyl fluoride	680.	Xylene dichloride
675.	Vinyl norbornene	681.	Xylidine
676.	Vinyl toluene	682.	Zinc dichloropentanitrile
677.	Vinyledene chloride	683.	Zinc phosphide
678.	Warfarin	684.	Zirconium & compounds]

*SCHEDULE 2*

[See rules 2(e)(ii), 4(1)(b), 4(2) and 6(1)(b)]

**ISOLATED STORAGE AT INSTALLATIONS OTHER THAN  
THOSE COVERED BY SCHEDULE 4**

(a) The threshold quantities set out below relate to each installation or group of installations belonging to the same occupier where the distance between installations is not sufficient to avoid, in foreseeable circumstances, any aggravation of major accident hazards. These threshold quantities apply in any case to each group of installations belonging to the same occupier where the distance between the installations is less than 500 metres.

(b) For the purpose of determining the threshold quantity of a hazardous chemical at an isolated storage, account shall also be taken of any hazardous chemical which is :

- (i) in that part of any pipeline under the control of the occupier having control of the site, which is within 500 metres of that site and connected to it;
- (ii) at any other site under the control of the same occupier any part of the boundary of which is within 500 metres of the said site; and
- (iii) in any vehicle, vessel, aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 metres of it ;

but no account shall be taken of any hazardous chemical which is in a vehicle, vessel, aircraft or hovercraft used for transporting it.

Sl. No.	Chemicals	Threshold quantities (tonnes)	
		<sup>1</sup> [For application of rules 4, 5, 7 to 9 and 13 to 15	<sup>1</sup> [For application of rules 10 to 12]
(1)	(2)	(3)	(4)
1.	Acrylonitrile	350	5.000
2.	Ammonia	60	600
3.	Ammonium nitrate (a)	350	2.500
4.	Ammonium nitrate fertilizers (b)	1.250	10.000
5.	Chlorine	10	25
6.	Flammable gases as defined in Schedule 1, paragraph (b) (i)	50	300
<sup>1</sup> 7.	Extremely flammable liquids as defined in Schedule 1, paragraph (b) (ii)	5.000	50.000]

1. Subs by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

(1)	(2)	(3)	(4)
8.	Liquid oxygen	200	2,000
9.	Sodium chlorate	25	250
10.	Sulphur dioxide	20	500
11.	Sulphur trioxide	15	100
12.	Carbonyl chloride	0.750	0.750
13.	Hydrogen sulphide	5	50
14.	Hydrogen fluoride	4	50
15.	Hydrogen cyanide	5	50
16.	Carbon disulphide	20	200
17.	Bromine	50	500
18.	Ethylene oxide	5	501
19.	Propylene oxide	5	50
20.	2-Propenal (Acrolein)	20	200
21.	Bromomethane (Methyl bromide)	20	200
22.	Methyl isocyanate	0.150	0.150
23.	Tetraethyl lead or tetramethyl lead	5	50
24.	1, 2 Dibromoethane (Ethylene dibromide)	5	50
25.	Hydrogen chloride (liquefied gas)	25	250
26.	Diphenyl methane (di-isocyanate (MDI)	20	200
27.	Toluene di-isocyanate (TDI)	10	100]
28.	Very Highly flammable liquids as defined in Schedule 1, paragraph (b)(iii)	7.000	7.000
29.	Highly Flammable liquids as defined in Schedule 1, paragraph (b)(iv)	10.000	10,000
30.	Flammable liquids as defined in Schedule-I, paragraph (b)(v)	15.000	1,00,000]

(a) This applies to ammonium nitrate and mixtures of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28 per cent by weight and to aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90 per cent by weight.

(b) This applies to straight ammonium nitrate fertilizers and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28 per cent by weight (a compound-fertilizer contains ammonium nitrate together with phosphate and/or potash).

1. Ins. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

## SCHEDULE 3

[See rules 2(e)(iii), 5 and 6(1)(a)]

LIST OF HAZARDOUS CHEMICALS FOR APPLICATION  
OF RULES 5 AND 7 TO 15

(a) The quantities set out below relate to each installation or group of installations belonging to the same occupier where the distance between installations is not sufficient to avoid, in foreseeable circumstances, any aggravation of major accident hazards. These quantities apply in any case to each group of installations belonging to same occupier where the distance between the installations is less than 500 metres.

(b) For the purpose of determining the threshold quantity of a hazardous chemical in an industrial installation, account shall also be taken of any hazardous chemical which is:

- (i) in that part of any pipeline under the control of the occupier having control of the site, which is within 500 metres of that site and connected to it;
- (ii) at any other site under the control of the same occupier any part of the boundary of which is within 500 metres of the said site; and
- (iii) in any vehicle, vessel, aircraft or hovercraft under the control of the same occupier which is used for storage purpose either at the site or within 500 metres of it ;

but no account shall be taken of any hazardous chemical which is in a vehicle, vessel, aircraft or hovercraft used for transporting it.

PART I  
NAMED CHEMICALS

Sl. No.	Chemicals	Threshold quantities		CAS Number
		For application of rules 5, 7 - 9 and 13 - 15	For application of rules 10 - 12	
(1)	(2)	(3)	(4)	(5)

## GROUP 1—TOXIC CHEMICALS:

1.	Aldicarb	100 kg	116-06-3
2.	4-Aminodiphenyl	1 kg	92-67-1
3.	Amiton	1 kg	78-53-5
4.	Anabasine	100 kg	494-52-0
5.	Arsenic pentoxide, arsenic (V) acid and salts	500 kg	
6.	Arsenic trioxide, arsenious (III) acid and salts	100 kg.	
7.	Arsine (arsenic hydride)	10 kg.	7784-42-1
8.	Azinphos-ethyl	100 kg.	2642-71-9
9.	Azinphos-methyl	100 kg	86-50-0
10.	Benzidine	1 kg	92-87-5
11.	Benzidine salts	1 kg	

(1)	(2)	(3)	(4)	(5)
12.	Beryllium (powders, compounds)	10 kg		
13.	Bis (2-chloroethyl) sulphide	1 kg		505-60-2
14.	Bis (chloromethyl) ether	1 kg		542-88-1
15.	Carbofuran	100 kg		1563-66-2
16.	Carbophenothion	100 kg		786-19-6
17.	Chlorfenvinphos	100 kg.		470-90-6
18.	4-(Chloroformyl) morpholine	1 kg.		15159-40-7
19.	Chloromethyl methyl ether	1 kg.		107-30-2
20.	Cobalt (metal, oxides, carbonates, sulphides, as powders)	1 t.		
21.	Crimidine	100 kg.		535-89-7
22.	Cyanthoate	100 kg.		3734-95-0
23.	Cycloheximide	100 kg.		66-81-9
24.	Demeton	100 kg.		8065-48-3
25.	Dialifos	100 kg.		10311-84-9
26.	OO -Diethyl S-ethylsulphonylmethyl phosphorothioate	100 kg.		2588-05-8
27.	OO-Diethyl S-ethylsulphonylmethyl phosphorothioate	100 kg.		2588-06-9
28.	OO-Diethyl S-ethylthiomethyl phosphorotrnoate	100 kg.		2600-69-3
29.	OO-Diethyl S-isopropylthio-methyl phosphorodithioate	100 kg.		78-52-4
30.	OO-Diethyl 5-propylthiomethyl phosphorodithioate	100 kg.		3309-68-0
31.	Dimefox	100 kg.		115-26-4
32.	Dimethylcarbamoyl chloride	1 kg.		79-44-7
33.	Dimethylnitrosamine	1 kg.		62-75-9
34.	Dimethyl phosphoramido-cyanidic acid	1 t.		63917-41-9
35.	Diphacinone	100 kg.		82-66-6
36.	Disulfoton	100 kg.		298-04-4
37.	EPN	100 kg.		2104-64-5
38.	Ethion	100 kg.		563-12-2
39.	Fensulfothion	100 kg.		115-90-2
40.	Fluenetil	100 kg.		4301-50-2
41.	Fluoroacetic acid	1 kg.		144-49-0
42.	Fluoroacetic acid, salts	1 kg.		
43.	Fluoroacetic acid, esters	1 kg.		
44.	Fluoroacetic acid, amides	1 kg.		
45.	4-Fluorobutyric acid	1 kg.		462-23-7
46.	4-Fluorobutyric acid, salts	1 kg.		

(1)	(2)	(3)	(4)	(5)
47.	4-Fluorobutyric acid, esters	1 kg.		
48.	4-Fluorobutyric acid, amides	1 kg.		
49.	4-Fluorocrotonic acid	1 kg.		5775-02-
50.	4-Fluorocrotonic acid, salts	1 kg.		
51.	4-Fluorocrotonic acid, esters	1 kg.		
52.	4-Fluorocrotonic acid, amides	1 kg.		
53.	4-Fluoro-2 hydroxybutyric acid	1 kg.		
54.	4-Fluoro-2 hydroxybutyric acid, salts	1 kg.		
55.	4-Fluoro-2-hydroxybutyric acid, esters	1 kg.		
56.	4-Fluoro-2-hydroxybutyric acid, amides	1 kg.		
57.	Glycolonitrile (hydroxyacetonitrile)	100 kg.		107-16-4
58.	1, 2, 3, 7, 8, 9-Hexachlorodibenzo-p-dioxin	100 kg.		19408-74-3
59.	Hexamethylphosphoramide	1 kg.		680-31-91
60.	Hydrogen selenide	10 kg.		7783-07-5
61.	Isobenzan	100 kg.		297-78-9
62.	Isodrin	100 kg.		465-73-6
63.	Juglone (5-Hydroxynaphthalene 1, 4-dione)	100 kg.		481-39-0
64.	4, 4'-Methylenebis (2 chloroaniline)	10 kg.		101-14-4
65.	Methyl isocyanate	150 kg.	150 kg.	624-83-9
66.	Mevinphos	100 kg.		7786-34-7
67.	2-Naphthylamine	1 kg.		91-59-8
68.	Nickel (metal, oxides, carbonates, sulphide, as powders)	1 t.		
69.	Nickel tetracarbonyl	10 kg.		13463-39-3
70.	Oxydisulfoton	100 kg.		2497-07-6
71.	Oxygen difluoride	10 kg.		7783-41-7
72.	Paraoxon (Diethyl 4-nitrophenyl phosphate)	100 kg.		311-45-5
73.	Parathion	100 kg.		56-38-2
74.	Parathion-methyl	100 kg.		298-00-0
75.	Pentaborane	100 kg.		19624-22-7
76.	Phorate	100 kg.		298-02-2
77.	Phosacetim	100 kg.		4104-14-7
78.	Phosgene (carbonyl chloride)	750 kg.	750 kg.	75-44-5
79.	Phosphamidon	100 kg.		13171-21-6
80.	Phosphine (Hydrogen phosphate)	100 kg.		7803-51-2
81.	Promurit (1-(3, 4-Dichlorophenyl)-3-triazenethio-carboxamide)	100 kg.		5836-73-7
82.	1, 3-Propanesulphone	1 kg.		1120-71-4
83.	1-Propen-2-chloro-1, 3-diol diacetate	10 kg.		10118-72-6
84.	Pyrazoxon	100 kg.		108-34-9

(1)	(2)	(3)	(4)	(5)
85.	Selenium hexafluoride	10 kg.		7783-79-1
86.	Sodium selenite	100 kg.		10102-18-8
87.	Stibine (antimony hydroide)	100 kg.		7803-52-3
88.	Sulfotep	100 kg.		3689-24-5
89.	Sulphur dichloride	1 t.		10545-99-0
90.	Tellurium hexafluoride	100 kg.		7783-80-4
91.	TEPP	100 kg.		107-49-3
92.	2, 3, 7, 8-Tetrachlorodibenzo- p- dioxin (TCDD)	1 kg.		1746-01-6
93.	Tetramethylenedisulphotetramine	1 kg.		80-12-6
94.	Thionazin	100 kg.		297-97-2
95.	Tripate (2, 4-Dimethyl-1, 3- dithiolane-2-carboxaldehyde O-methylcarbamoyloxime)	100 kg.		26419-73-8
96.	Trichloromethanesulphonyl chloride	100 kg.		594-42-3
97.	1-Tri (cyclohexyl) stannyl-1H-1, 2, 4-triazole	100 kg.		41083-11-8
98.	Triethylenemelamine	10 kg.		51-18-3
99.	Warfarin	100 kg.		81-81-2
GROUP 2-TOXIC CHEMICALS:				
100.	Acetone cyanohydrin (2-Cyanopropan-2-)1	200 t.		75-86-5
101.	Acrolein (2-Propenal)	20 t.	[200 t]	107-02-8
102.	Acrylonitrile	20 t.	200 t.	107-13-1
103.	Allyl alcohol (Propen 1-01)	200 t.		107-18-6
104.	Allylamine	200 t.		107-11-9
105.	Ammonia	50 t.	[500 t.]	7664-41-7
106.	Bromine	40 t.		7726-95-6
107.	Carbon disulphide	20 t.	200 t.	71-15-0
108.	Chlorine	10 t.	25 t.	7782-50-5
109.	Diphenyl methane di-isocyanate (MDI)	20 t.	[50 t]	101-68-8
110.	Ethylene dibromide (1, 2-Dibro-methane)	5 t.	[50 t]	106-93-4
111.	Ethyleneamine	50 t.	[50 t]	151-56-5
112.	Formaldehyde (concentration 390%)	5 t.		50-00-0
113.	Hydrogen chloride (liquefied gas)	25 t.	250 t.	7647-01-0
114.	Hydrogen cyanide	5 t.	20 t.	74-90-08
115.	Hydrogen fluoride	5 t.	50 t.	7664-39-3

(1)	(2)	(3)	(4)	(5)
116.	Hydrogen sulphide	5 t.	50 t.	7783-06-4
117.	Methyl bromide (Bromomethane)	20 t.	<sup>1</sup> [200 t]	74-83-9
118.	Nitrogen oxides	50 t.	11104-93-1	
119.	Propyleneamine	50 t.	75-55-8	
120.	Sulphur dioxide	20 t.	250 t.	7446-09-5
121.	Sulphur trioxide	15 t.	75 t.	7446-11-9
122.	Tetraethyllead	5 t.		78-00-2
123.	Tetramethyl lead	5 t.	<sup>1</sup> [200 t.]	75-74-1
124.	Toluene-di-isocyanate (TDI)	10 t.	<sup>1</sup> [100 t]	584-84-9
GROUP 3-HIGHLY REACTIVE CHEMICALS:				
125.	Acetylene (ethyne)	5 t.		74-86-2
126.	(a) Ammonium nitrate (1)	350 t.	2,500 t.	6484-52-2
	(b) Ammonium nitrate in the form of fertiliser (2)	1,250 t.		
127.	2, 2-Bis (tert-butylperoxy) butane (concentration $\geq 70\%$ )	5 t.		2167-23-9
128.	1, 1-Bis (tert-butylperoxy) cyclohexane (concentration $\geq 80\%$ )	5 t.		3006-86-8
129.	Tert-Butyl peroxyacetate (concentration $\geq 70\%$ )	5 t.		107-71-1
130.	Tert-Butyl peroxy isobutyrate (concentration $\geq 80\%$ )	5 t.		109-13-7
131.	Tert-Butyl peroxy isopropyl carbonate (concentration $\geq 80\%$ )	5 t.		2372-21-6
132.	Tert-Butyl peroxy maleate (concentration 80%)	5 t.		1931-62-0
133.	Tert-Butyl peroxy pivalate (concentration $\geq 77\%$ )	50 t.		927-07-1
134.	Dibenzyl peroxy dicarbonate (concentration $\geq 90\%$ )	5 t.		2144-45-8
135.	Di-sec-butyl peroxy dicarbonate (concentration $\geq 80\%$ )	5 t.		19910-65-7
136.	Diethyl peroxy dicarbonate (concentration $\geq 30\%$ )	50 t.		14666-78-5

1. Ins. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

(1)	(2)	(3)	(4)	(5)
137.	2, 2-Dihydroperoxypropane (concentration $\geq 30\%$ )	5t.		2614-76-8
138.	Di-isobutryl peroxide (concentration $\geq 50\%$ )	50 t.		3437-84-1
139.	Di- n-propyl peroxydicarbonate (concentration $\geq 80\%$ )	5 t.		16066-38-9
140.	Ethylene oxide	5 t.	50 t.	75-21-8
141.	Ethyl nitrate	50 t.		625-58-1
142.	3,3,6,6,9, 9-Hexamethyl-1, 2, 4, 5-tetroxacyclononane (concentration 3 75%)	50 t.		22397-33-7
143.	Hydrogen	2 t.	50t.	1333-74-0
144.	Liquid oxygen	200 t.	<sup>1</sup> [200 t.]	7782-44-7
145.	Methyl ethyl ketone peroxide (concentration $\geq 60\%$ )	5 t.		1338-23-4
146.	Methyl isobutyl ketone peroxide' (concentration $\geq 60\%$ )	50 t.		37206-20-5
147.	Peracetic acid (concentration $\geq 60\%$ )	50 t.		79-21-0
148.	Propylene oxide	5 t.	<sup>1</sup> [50 t]	75-56-9
149.	Sodium chlorate	25 t.		7775-09-9
GROUP 4-EXPLOSIVE CHEMICALS:				
150.	Barium azide	<sup>2</sup> [100 kg]		18810-58-7
151.	Bis (2, 4, 6-trinitrophenyl) amine	50 t.		131-73-7
152.	Chlorotrinitrobenzene	50 t.		28260-61-9
153.	Cellulose nitrate (containing $\geq 12.6\%$ nitrogen)	50 t.		9004-70-0
154.	Cyclotetramethylenetetranitramine	50 t.		2691-41-0
155.	Cyclotrimethylenetrinitramine	50 t.		121-82-4
156.	Diazodinitrophenol	10 t.		7008-81-3
157.	Diethylene glycol dinitrate	10 t.		693-21-0
158.	Dinitrophenol, salts	50 t.		
159.	Ethylene glycol dinitrate	10 t.		628-96-6
160.	1-Guanyl-4-nitrosaminoguanyl-1-tetrazene	<sup>1</sup> [100 kg]		109-27-3
161.	2, 2, 4, 4, 6, 6-Hexanitrostilbene	50 t.		20062-22-0
162.	Hydrazine nitrate	50 t.		13464-97-6
163.	Lead azide	<sup>1</sup> [100 kg].		13424-46-9
164.	Lead styphnate (Lead 2, 4, 6- trinitroresorcinoxide)	<sup>1</sup> [100 kg]		15245-44-0

1. Ins. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

(1)	(2)	(3)	(4)	(5)
165.	Mercury fulminate		<sup>1</sup> [100 kg]	20820-45-5 628-86-4
166.	N-Methyl-N, 2, 4, 6-tetranitroaniline	50 t.		479-45-8
167.	Nitroglycerine	10 t.	10t.	55-63-0
168.	Pentaerythritol tetranitrate	50 t.		78-11-5
169.	Picric acid (2, 4, 6-trinitro phenol)	50 t.		88-89-1
170.	Sodium picramate	50 t.		831-52-7
171.	Styphnic acid (2, 4, 6-trinitroresorcinol)	50 t.		82-71-3
172.	1, 3, 5, Triamino- 2, 4, 6-trinitrobenzene	50 t.		3058-38-6
173.	Trinitroaniline-	50 t.		26952-42-1
174.	2, 4, 6- Trinitroanisole	50 t.		606-35-9
175.	Trinitrobenzene	50 t.		25377-32-6
176.	Trinitrobenzoic acid	50 t.		35860-50-5 129-66-8
177.	Trinitrocresol	50 t.		28905-71-7
178.	2, 4, 6-Trionitrophenitole	50 t.		4732-14-3
179.	2, 4, 6- Trinitrotoluene	50 t.	50 t.	118-96-7

## [PART II

### CLASSES OF SUBSTANCES AS DEFINED IN PART I, SCHEDULE I AND NOT SPECIFICALLY NAMED IN PART I OF THIS SCHEDULE.

(1)	(2)	(3)	(4)
<b>GROUP5—FLAMMABLE SUBSTANCES:</b>			
1.	Flammable Gases:	15 t.	200 t.
2.	Extremely flammable liquids	1.000 t.	5.000 t
3.	Very Highly flammable liquids	15.00 t.	10.000 t.
4.	Highly Flammable liquids which remains liquid under pressure	25 t	200 t
5.	Highly Flammable liquids	2500 t	20.000 t
6.	Flammable liquids	5.000 t	50.000 t]

1. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

(1) This applies to ammonium nitrate and mixtures of ammonium nitrate where the nitrogen content derived from the ammonium nitrate is greater than 28% by weight and aqueous solutions of ammonium nitrate where the concentration of ammonium nitrate is greater than 90% by weight.

(2) This applies to straight ammonium nitrate fertilizers and to compound fertilizers where the nitrogen content derived from the ammonium nitrate is greater than 28% by weight (a compound fertilizer contains ammonium nitrate together with phosphate and/or potash).

#### SCHEDULE 4

[See rule 2(h)(i)]

1. Installations for the production, processing or treatment of organic or inorganic chemicals using for this purpose, among others:

- (a) alkylation
- (b) amination by ammonolysis
- (c) carbonylation
- (d) condensation
- (e) dehydrogenation
- (f) esterification
- (g) halogenation and manufacture of halogens
- (h) hydrogenation
- (i) hydrolysis
- (j) oxidation
- (k) polymerization
- (l) sulphonation
- (m) desulphurization, manufacture and transformation of sulphur-containing compounds
- (n) nitration and manufacture of nitrogen-containing compounds
- (o) manufacture of phosphorous-containing compounds
- (p) formulation of pesticides and of pharmaceutical products
- (q) distillation
- (r) extraction
- (s) solvation
- (t) mixing

2. Installations for distillation, refining or other processing of petroleum or petroleum products.

3. Installations for the total or partial disposal of solid or liquid substances by incineration or chemical decomposition:

4. Installations for production, processing<sup>1</sup> [use] or treatment of energy gases, for example, LPG, LNG, SNG.

5. Installations for the dry distillation of coal or lignite.

6. Installations for the production of metals or non-metals by a wet process or by means of electrical energy.

1. Ins. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

*SCHEDULE 5*  
(See rules 2(b) and 3]

Sl. No.	Authority{ies) with legal backing	Duties and corresponding rule
(1)	(2)	(3)
1.	Ministry of Environment and Forests under Environment (Protection) Act, 1986.	Notification of hazardous chemicals as per rule 2(e)(i), 2(e)(ii) and 2(e)(iii)
2.	Chief Controller of Imports and Exports under Import and Export (Control) Act, 1947.	Import of hazardous chemicals as per rule 18.
3.	Central Pollution Control Board or '[State Pollution Control Board or Committee] under Environment (Protection) Act, 1986 as the case may be.	<p>(1) Enforcement of directions and procedures in respect of isolated storage of hazardous chemicals, regarding,—</p> <p>(i) Notification of major accidents as per rule 5(1) and 5(2).</p> <p>(ii) Notification of sites as per rules 7 to 9.</p> <p>(iii) Safety reports in respect of isolated storages as per rules 10 to 12.</p> <p>(iv) Preparation of on-site emergency plans as per rule 13.</p> <p>(2) Import of hazardous chemicals and enforcement of directions and procedures on import of hazardous chemicals as per rule 18.</p>
4.	Chief Inspector of Factories appointed under the Factories Act, 1948.	<p>Enforcement of directions and procedures in respect of industrial installations and isolated storages covered under the Factories Act, 1948. dealing with hazardous chemicals and pipelines including inter-state pipelines regarding,—</p> <p>(i) Notification of major accidents as per rule 5 (1) and 5(2).</p> <p>(ii) Notification of sites as per rules 7 to 9.</p> <p>(iii) Safety reports as per rules 10 to 12.</p> <p>(iv) Preparation of on-site emergency plans as per rule 13.</p> <p>(v) Preparation of off- site emergency plans in consultation with District Collector or District Emergency Authority as per serial No.9 of this Schedule.</p>
5.	Chief Inspector of Dock Safety appointed under the Dock Workers (Safety, Health and Welfare) Act, 1986.	Enforcement of directions and procedures in respect of industrial installations and isolated storages dealing with hazardous chemicals and pipelines

(1)	(2)	(3)
6. Chief Inspector of Mines appointed under the Mines Act, 1952.	<p>[inside a port (covered under the Dock Worker (Safety Health and Welfare Act, 1986)] regarding,—</p> <p>(i) Notification of major accidents as per rule 5(1) and 5(2).</p> <p>(ii) Notification of sites as per rules 7 to 9.</p> <p>(iii) Safety reports as per rules 10 to 12.</p> <p>(iv) Preparation of on-site emergency plans as per rule 13.</p> <p>(v) Preparation of off-site emergency plans in consultation with District Collector or District Emergency Authority as per serial No.9 of this Schedule.</p>	<p>Enforcement of directions and procedures in respect of industrial installations and isolated storages dealing with the hazardous chemicals [***] regarding,</p> <p>(i) Notification of major accidents as per rule 5(1) and 5(2).</p> <p>(ii) Notification of sites as per rules 7 to 9.</p> <p>(iii) Safety reports as per rules 10 to 12.</p> <p>(iv) Preparation of on-site emergency plans as per rule 13.</p> <p>(v) Preparation of off-site emergency plans in consultation with District Collector or District Emergency Authority as per serial No.9 of this Schedule.</p>
7. Atomic Energy Regulatory Board appointed under the Atomic Energy Act, 1972.	<p><sup>2</sup>[Enforcement of directions and procedures regarding:—</p> <p>(a) Notification of major accidents as per rule 5(1) and 5(2)</p> <p>(b) Approval and Notification of Sites as per rule 7;</p> <p>(c) Safety report and safety audit reports as per rule 10 to 12:</p> <p>(d) acceptance of On-Site Emergency plans as per rule 13:</p>	

1. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

2. Omitted by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

(1)	(2)	(3)
8.	Chief Controller of Explosives appointed under the Indian Explosive Act and Rules, 1983.	<p>(e) assisting the District Collector in the preparation of Off-Site emergency plans as per serial number 9 of this Schedule]</p> <p>Enforcement of directions and procedures as per the provisions of the Indian Explosives Act and Rules, 1983.</p> <p><sup>1</sup>[(i) The Explosive Act, 1884 (4 of 1884 and the rules made thereunder, namely:</p> <p>(a) The Gas Cylinders Rules, 1981;</p> <p>(b) The Static and Mobile Pressure Vessel (Unfired) Rules, 1981;</p> <p>(c) The Explosive Rules, 1984.</p> <p>(ii) The Petroleum Act, 1934 (30 of 1934) and the Rules made thereunder, namely:—</p> <p>(a) The Petroleum Rules, 1976.</p> <p>(b) The Calcium Carbide Rules, 1987.]</p> <p><sup>2</sup>[and in respect of industrial installation and isolated storages dealing with hazardous chemicals and pipelines including inter-state pipelines regarding:—</p> <p>(a) Notification of major accidents as per rule 5;</p> <p>(b) Approval and notification of Sites as per rule 7;</p> <p>(c) Safety report and safety audit reports as per rules 10 to 12;</p> <p>(d) Acceptance of On-Site Emergency plans as per rule 13;</p> <p>(e) assisting the District Collector in the preparation of Off-Site emergency plans as per serial number of this Schedule.]</p>
9.	District Collector or District Emergency Authority designated by the State Government.	Preparation of off-site emergency plans as per rule 14.
<sup>3</sup> [10.]	<sup>4</sup> [Centre for Environment and Explosive Safety (CEES)], Defence Research and Development Organisation (DRDO), Department of Defence Research and Development, Ministry of Defence.	Enforcement of directions and procedures in respect of laboratories, industrial establishments and isolated storages dealing with hazardous chemicals in the Ministry of Defence.]

1. Subs. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

2. Ins. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

3. Ins. by G.S.R. 584(E), dated 19th June, 1990 (w.e.f. 19-6-1990).

4. Subs. by S.O. 57(E), dated 19th January, 2000 (w.e.f. 20-1-2000).

SCHEDULE 6

[See rule 5(1)]

**INFORMATION TO BE FURNISHED REGARDING NOTIFICATION OF A MAJOR ACCIDENT**

Report number.....  
of the particular accident.

1. General data:

- (a) Name of the site
- (b) Name and address of the manufacturer  
(also state telephone/telex number)
- (c) (i) Registration number  
(ii) License number  
(As may have been allotted under any statute applicable to the site, e.g. the Factories Act)
- (d) (i) Nature of industrial activity  
(mention what is actually manufactured, stored, etc.)  
(ii) National Industrial Classification, 1987, at the four digit level.

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2. Type of major accident :

Explosion                       Fire                       Emission of dangerous substance

Substance(s) emitted .....

3. Description of the major accident :

- (a) Date, shift and hour of the accident
- (b) Department/Section and exact place where the accident took place
- (c) The process/operation undertaken in the Department/Section where the accident took place  
(Attach a flow chart, if necessary)
- (d) The circumstances of the accident and the dangerous substance involved.

4. Emergency measures taken and measures envisaged to be taken to alleviate short-term effects of the accident

5. Causes of the major accident

Known (to be specified)

Not known

Information will be supplied as soon as possible

6. Nature and extent of damage :

(a) *Within the establishment—*  
casualties

..... killed  
 ..... injured  
 ..... poisoned  
 .....

persons exposed to the major accident

material damage

danger is still present

danger no longer exists

(b) *Outside the establishment—*  
casualties

..... killed  
 ..... injured  
 ..... poisoned  
 .....

persons exposed to the major accident

material damage

danger to environment

the danger is still present

the danger no longer exists

7. Data available for assessing the effects of the accident of persons and environment

8. Steps Already taken or envisaged
- (a) to alleviate medium or long-term effects of the accident
  - (b) to prevent recurrence of similar major accidents.
  - (c) any other relevant information

*SCHEDULE 7*

**INFORMATION TO BE FURNISHED FOR THE NOTIFICATION OF SITES**

**PART 1**

Particulars to be included in a notification of a site :

1. The name and address of the employer making the notification.
2. The full postal address of the site where the notifiable industrial activity will be carried on.
3. The area of the site covered by the notification and of any adjacent site which is required to be taken into account by virtue of b (ii) of Schedules 2 and 3.
4. The date on which it is anticipated that the notifiable industrial activity will commence, or if it has already commenced a statement to that effect.
5. The name and maximum quantity liable to be on the site of each dangerous substance for which notification is being made.

6. Organisation structure, namely, organisation diagram for the proposed industrial activity and set up for ensuring safety and health.
7. Information relating to the potential for major accidents, namely—
  - (a) identification of major accident hazards;
  - (b) the conditions or events which could be significant in bringing one about; and
  - (c) a brief description of the measures taken.
8. Information relating to the site, namely—
  - (a) a map of the site and its surrounding area to a scale large enough to show any features that may be significant in the assessment of the hazard or risk associated with the site,—
    - (i) area likely to be affected by the major accident;
    - (ii) population distribution in the vicinity;
  - (b) a scale plan of the site showing the location and quantities of all significant inventories of the hazardous chemicals;
  - (c) a description of the process or storage involving the hazardous chemicals and an indication of the conditions under which it is normally held;
  - (d) the maximum number of persons likely to be present on site.
9. The arrangement for training of workers and equipment necessary to ensure safety of such workers.

## PART II

Particulars to be included regarding pipeline :

1. The name and the address of the person making the notification.
2. The full postal address of the place from which the pipeline activity is controlled, addresses of the places where the pipeline starts and finishes and a map showing the pipeline route drawn to a scale of not less than 1 : 400000.
3. The date on which it is anticipated that the notifiable activity will commence, or if it is already commenced a statement to the effect.
4. The total length of the pipeline, its diameter and normal operating pressure and the name and maximum quantity liable to be in the pipeline of each hazardous chemical for which notification is being made.

## SCHEDULE 8

[See rule 10(1)]

### INFORMATION TO BE FURNISHED IN A SAFETY REPORT

1. The name and address of the person furnishing the information.
2. Description of the industrial activity, namely—
  - (a) site,
  - (b) construction design,
  - (c) protection zones explosion protection, separation distances,
  - (d) accessibility of plant,
  - (e) maximum number of persons working on the site and particularly of those persons exposed to the hazard.
3. Description of the processes, namely—
  - (a) technical purpose of the industrial activity,
  - (b) basic principles of the technological process,
  - (c) process and safety-related data for the individual process stages.

- (d) process description.
- (e) safety-related types of utilities.
- 4. Description of the hazardous chemicals, namely—
  - (a) chemicals (quantities, substance data, safety-related data, toxicological data and threshold values),
  - (b) the form in which the chemical may occur on or into which they may be transformed in the event of abnormal conditions,
  - (c) the degree of purity of the hazardous chemical.
- 5. Information on the preliminary hazard analysis, namely—
  - (a) types of accident,
  - (b) system elements or events that can lead to a major accident,
  - (c) hazards,
  - (d) safety-relevant components.
- 6. Description of safety-relevant units, among others :
  - (a) special design criteria,
  - (b) controls and alarms,
  - (c) special relief systems,
  - (d) quick-acting valves,
  - (e) collecting tanks/dump tank,
  - (f) sprinkler system,
  - (g) fire-fighting, *etc.*
- 7. Information on the hazard assessment, namely—
  - (a) identification of hazards,
  - (b) the causes of major accidents,
  - (c) assessment of hazards according to their occurrence frequency,
  - (d) assessment of accident consequences,
  - (e) safety systems,
  - (f) known accident history.
- 8. Description of information on organisational systems used to carry on the industrial activity safely, namely—
  - (a) maintenance and inspection schedules,
  - (b) guidelines for the training of personnel,
  - (c) allocation and delegation of responsibility for plant safety,
  - (d) implementation of safety procedures.
- 9. Information on assessment of the consequences of major accidents, namely—
  - (a) assessment of the possible release of hazardous chemicals or of energy,
  - (b) possible dispersion of released chemicals,
  - (c) assessment of the effects of the releases (size of the affected area, health effects, property damage).
- 10. Information on the mitigation of major accidents, namely—
  - (a) fire brigade
  - (b) alarm systems;
  - (c) emergency plan containing system of organisation used to fight the emergency, the alarm and the communication routes, guidelines for fighting the emergency, information about hazardous chemicals, examples of possible accident sequences.
  - (d) co-ordination with the District Emergency authority and its off-site emergency plan.
  - (e) notification of the nature and scope of the hazard in the event of an accident.
  - (f) antidotes in the event or release of a hazardous chemical.

## SCHEDULE 9

(See rule 17)

## SAFETY DATA SHEET

## 1. CHEMICAL IDENTITY :

Chemical name		Chemical classification	
Synonyms		Trade name	
Formula		C.A.S. No.	U.N.No. :
Regulated identification	Shipping Name		Hazchem No. :
	Codes/Labels		
	Hazardous waste		
I.D. No. :			
Hazardous ingredients	C.A.S. No.	Hazardous ingredients	C.A.S. No. :
1.		3.	
2.		4.	

## 2. PHYSICAL AND CHEMICAL DATA :

Boiling range/Point °C		Physical state	Appearance
Melting/Freezing Point °C		Vapour pressure @ 35°C mm Hg	Odour
Vapour density (Air = 1)		Solubility in water @ 30°C Others	
Specific gravity (Water = 1)	pH		

## 3. FIRE AND EXPLOSION HAZARD DATA :

Flammability Yes/No	LEL	% Flash Point °C	Auto-ignition°C temperature
TDG flammability	UEL	% Flash Point °C	Hazardous combustion
Explosion Sensitivity to impact		Explosion Sensitivity to products Static Electricity	
Hazardous Polymerisation			
Combustible liquid	Explosive material	Corrosive material	
Flammable material	Oxidiser	Others	
Pyrophoric material	Organic peroxide		

## 4. REACTIVITY DATA :

Chemical Stability
Incompatibility with other Material
Reactivity
Hazardous Reaction Products

## 5. HEALTH HAZARD DATA :

Routes of Entry

Effects of  
Exposure/Symptoms

Emergency

Treatment

TLV (ACGIH)	ppm	mg/m <sup>3</sup>	STEL	ppm	mg/m <sup>3</sup>
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Permissible Exposure Limit LD <sub>50</sub>	ppm	mg/m <sup>3</sup>	Odour Threshold LD <sub>50</sub>	ppm	mg/m <sup>3</sup>
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NEPA	Hazard Signals	Health	Flammability	Stability	Special
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## 6. PREVENTIVE MEASURES :

Personnel  
Protective  
EquipmentHandling and  
Storage  
Precautions

## 7. EMERGENCY AND FIRST AID MEASURES:

<i>Fire</i>	Fire	<i>Fire Extinguishing Media</i>
		Special Procedures Unusual Hazards
	Exposure	First-Aid Measures Antidotes/Dosages
		Spills

## 8. ADDITIONAL INFORMATION/REFERENCES :

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## 9. MANUFACTURER/SUPPUERS DATA:

Name of Firm	Contact Person in emergency
Mailing Address	Local Bodies involved
Telephone/Telex Nos.	Standard Packing
Telegraphic Address	Tremcard Details/Ref.
	Other

**10. DISCLAIMER:**

Information contained in this material data sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer/seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured/handled or sold by him, as the case may be. The Government makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

**SCHEDULE 10**

[[See rule 18(5)]

**FORMAT FOR MAINTAINING RECORDS OF HAZARDOUS CHEMICALS IMPORTED**

1. Name and address of the importer:
2. Date and reference number of issuance of permission to import hazardous chemicals:
3. Description of hazardous chemicals:
  - (a) Physical form:
  - (b) Chemical form:
  - (c) Total volume and weight:  
(in kilogrammes/tonnes)
4. Description of purpose of import:
5. Description of storage of hazardous chemicals:
  - (a) Date:
  - (b) Method of storage:

**[SCHEDULE 11]**

[See rule 13(1)]

**DETAILS TO BE FURNISHED IN THE ON-SITE EMERGENCY PLAN**

1. Name and address of the person furnishing the information.
2. Key personnel of the organisation and responsibilities assigned to them in case of an emergency.
3. Outside organisations if involved in assisting during on-site emergency.
  - (a) Type of accidents.
  - (b) Responsibility assigned.
4. Details of liaison arrangement between the organisations. Information on the preliminary hazard analysis:
  - (a) Type of accidents.

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1. Subs. by S.O. 2882(E), dated 3rd October, 1994 (w.e.f. 22-10-1994).

- (b) System elements or event that can lead to a main accident.
  - (c) Hazards.
  - (d) Safety relevant components.
5. Details about the site:
    - (a) Location of dangerous substances.
    - (b) Seat of key personnel.
    - (c) Emergency control room.
  6. Description of hazardous chemicals at plant site:
    - (a) Chemicals (Quantities and Toxicological data).
    - (b) Transformation if any which could occur.
    - (c) Purity of hazardous chemicals.
  8. Likely dangers to the plant.
  9. Enumerate effects of:
    - (i) stress and strain caused during normal operations.
    - (ii) fire and explosion inside the plant and effect if any of fire and explosion out side.
  10. Details regarding:
    - (i) warning, alarm and safety and security systems.
    - (ii) alarm and hazard control plans in line with disaster control and hazard control planning, ensuring necessary technical and organizational precaution.
    - (iii) reliable measuring instruments, control units and servicing of such equipments.
    - (iv) precautions in designing of the foundation and load bearing parts of the building.
    - (v) continuous surveillance of operations.
    - (vi) maintenance and repair work according to the generally recognised rules of goods engineering practices.
  11. Details of communication facilities available during emergency and those required for an off-site emergency.
  12. Details of fire fighting and other facilities available and those required for an off-site emergency.
  13. Details of first aid and hospital services available and its adequacy.

#### *SCHEDULE 12*

[See rule 14(1)]

#### **DETAILS TO BE FURNISHED IN THE OFF-SITE EMERGENCY PLAN**

1. The types of accidents and release to be taken in account.
2. Organisations involved including key personnel and responsibilities and liaison arrangements between them.
3. Information about the site including likely locations of dangerous substances, personnel and emergency control rooms.

4. Technical information such as chemical and physical characteristics and dangers of the substances and plant.
5. Identify the facilities and transport routes.
6. Contact for further advice *e.g.* meteorological information, transport, temporary food and accommodation, first aid and hospital services, water and agricultural authorities.
7. Communication links including telephones, radios and standby methods.
8. Special equipment including fire fighting materials, damage control and repair items.
9. Details of emergency response procedures.
10. Notify the public.
11. Evacuation arrangements.
12. Arrangements for dealing with the press and other media interests.
13. Longer term clean-up.]