(As on 18.9.2001)

THE MAJOR ACCIDENT HAZARD CONTROL RULES, 1997

ARRANGEMENT OF RULES

Schedule 8A Details to be furnished in the On-site Emergency Plan

Schedule 9 Repeals and Modifications to the Rules for the Factories (Amendment) Act, 1987

1. Short title and commencement –

(1) These Rules may be called The Major Accident Hazard Control Rules, 1997

(2) They shall come into force on the date of their publication in the Official Gazette as per the procedure laid down under the Factories Act, 1948.

(3) These Rules supplement the Rules already notified under Chapter IV-a of the Factories Act, 1948

2. Definition –

In these Rules, unless the context otherwise requires –

(a) "hazardous chemical" means, -

i) any chemical which satisfies any of the criteria laid down in Part I of Schedule 1 or is listed in Column 2 of Part II of this Schedule; or

ii) any chemical listed in Column 2 of Schedule 2; or

iii) any chemical listed in Column 2 of Schedule 3;

(b) "industrial activity" means : -

an operation or process carried out in a factory referred to in Schedule 4 involving or likely to involve one or more hazardous chemicals and includes on-site storage or on-site transport which is associated with that operation or process, as the case may be;

(c) "isolated storage" means storage which no other manufacturing process other than pumping of hazardous chemicals is carried out and that storage involves at least a quantity of that chemical set out in Schedule 2, but does not include storage associated with a factory specified in Schedule 4 on the same site.

(d) "major accident" means an incident involving loss of life inside or outside the site or 10 or more injuries inside and / or one or more injuries outside or release of toxic chemical or explosion or fire or spillage of hazardous chemicals resulting in 'on-site' or 'off-site' emergencies or damage to equipment leading to stoppage of process or adverse effects to the environment.

(e) "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 8 bars absolute;

(f) "Schedule" means Schedule appended to these Rules;

(g) ** ** **

(h) Words and expressions not defined in these Rules but used thereunder have the same meaning as assigned therein.

3. (1) This Rule shall apply to an industrial activity or isolated storage in which a hazardous chemical which satisfies any of the criteria laid down in Part I of Schedule 1 or listed in Column 2 of Part II of this Schedule is or may be involved.

(2) An occupier of an industrial activity or isolated storage in terms of Sub-rule (1) of this Rule, shall arrange to obtain or develop information in the form of Safety Date Sheet as specified in Schedule 5. The information shall be made accessible to workers upon request for reference.

(3) The occupier while obtaining or developing safety data sheet as specified in Schedule 5 in respect of 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 safety data sheet as specified in Schedule 5 as soon as practicable.

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

(a) the contents of the container;

(b) the name and address of the manufacturer or importer of the hazardous chemicals; and

(c) the physical, chemical and toxicological data of the hazardous chemical.

(5) In terms of sub-rule (4) of this Rule where it is impractical 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.

3A. Duties of Inspector –

The Inspector shall –

(a) inspect the industrial activity or isolated storage at least once in a calendar year;

(b) send annually status report on the compliance with the Rules by occupiers to the Ministry of Environment & Forests through the Directorate General Factory Advice Service and Labour Institutes and Ministry of Labour, Govt. of India

(c) enforce directions and procedures in respect of industrial activities or isolated storages covered under the Factories Act 1948 and in respect of pipelines upto a distance of 500 m from the outside of the perimeter of the factory, regarding –

(i) Notification of the major accidents as per Rules 5(1) & 5 (2).

(ii) Notification of sites as per Rules 7 & 8

(iii) Preparation of Safety Reports as per Rules 10-12.

(iv) Preparation of on-site emergency plans as per Rule 13 ad involvement in the preparation of off-site emergency plans in consultation with District Collector or District Emergency Authority.

4. General responsibility of the occupier –

(1) This Rule 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 1 or is listed in Column 2 of Part II of this Schedule is or may be involved; 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 threshold quantity specified in this Schedule for than chemical in Column 3 thereof.

(2) An occupier in terms of sub-rule (1) shall provide information on demand 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; and

(ii) provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safety and health.

5. Notification of Major Accident –

(1) where a major accident occurs on a site or in a pipeline the occupier shall with 48 hours notify the Inspector and Chief Inspector of than accident, and furnish thereafter to the inspector and Chief inspect a report relating to the accident in installments, if necessary, in Schedule 6.

(2) The Inspector and Chief Inspector 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 requisite information to the Ministry of Environment and Forests through the Directorate General Factory Advice Service and Labour Institutes and Ministry of Labour, Government of India.

(3) An occupier shall notify to the Inspector steps taken to avoid any repetition of such occurrence on a site.

(4) The Inspector and Chief Inspector shall compile information regarding major accidents and made available a copy of the same to the Ministry of Environment and Forests through Directorate General Factory Advice Service and Labour Institutes and Ministry of Labour, Government of India.

(5) The Inspector and the Chief Inspector shall inform the occupier in writing, of any lacunae which in their pinion needs to be rectified to avoid major accidents.

6. Industrial activities to which Rules 7 to 15 apply

(1) (a) Rules 7, 8, 13 and 15 shall apply to an industrial activity, other than isolated storage, in which there is chemical listed in Column 2 of Schedule 3 which is equal to or more than the threshold quantity specified in the entry for that chemical in Column 3;

(b) Rules from 10 to 12 shall apply to an industrial activity other than isolated storage, in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 3 which is equal to ore more than the threshold quantity specified in the entry for that chemical in Column 4;

(c) Rules 7 and 8 shall apply to an isolated storage in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to ore more than the threshold quantity specified in the entry for that chemical in Column 3;

(d) Rules 10 to 13 and 15 shall apply to an isolated storage in which there is involved a quantity of a hazardous chemical listed in Column 2 of Schedule 2 which is equal to ore more than the threshold quantity specified in the entry for that chemical in Column 4;

7. Notification of sites

(1) An occupier shall not undertake any industrial activity or isolated storage unless he has submitted a written report to Chief Inspector containing the particulars specified in Schedule 7 at least 90 days before commencing that activity or isolated storage; or before such shorter time as Chief inspector may agree and for the purposes of this sub-rule, an activity in which subsequently there is or is liable to be threshold quantity given in Column 3 of Schedules 2 and 3 or more of an additional hazardous chemical shall be deemed to be a different activity and shall be notified accordingly.

(2) The Chief Inspector within 60 days from the date of receipt of the report in accordance with sub-rule(1) of this Rules shall examine and on examination of the report if he is of the opinion that contravention of the provision of the Act or the Rules made thereunder has taken place, he may issue notice for obtaining compliance.

8. Updating of the notification under Rule 7

Where an industrial activity or isolated storage 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 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 Inspector and Chief Inspector.

9. ** ** **

10. Safety reports and Safety audit reports

(1) Subject to the following sub-rules of this Rule, an occupier shall not undertake any industrial activity or isolated storage to which this Rule applies, unless he has prepared a safety report on that industrial activity or isolated storage containing the information specified in Schedule 8 and has sent a copy of that report to Chief Inspector at least 90 days before commencing that activity.

(2) After the commencement of these Rules, the occupiers of both the new and the existing industrial activities or isolated storages shall arrange to carry out once in a year safety audit by a competent agency to be accredited by an Accreditation Board to be constituted by the Ministry of Labour, Government of India in this behalf and in absence of such Accreditation Board by a competent agency approved by Chief inspector of Factories.

(3) The occupier, within 30 days of the completion of the audit, shall send a report to the Chief Inspector with respect to the implementation of the audit recommendations.

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 or isolated storage to which tat 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 Inspector and Chief Inspector 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 than industrial activity or isolated storage 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 assessment and shall, within 30 days or in such longer time, as the Inspector and Chief Inspector may agree in writing, send a copy of the report to the Inspector and Chief Inspector.

12. Requirements for further information to be sent to the Inspector and the Chief Inspector

Where in accordance with Rules 10 and 11 an occupier has sent safety report and safety audit report relating to an industrial activity or isolated storage to the Inspector and Chief Inspector, the Inspector and Chief Inspector may by a notice served on the occupier, require him to provide such additional information as may be specified in the notice and the occupier shall send that information to the Inspector and Chief Inspector within 90 days.

13. Preparation of on-site emergency plan by the occupier

(1) The occupier shall prepare, keep up-to-date and furnish to the Inspector and Chief Inspector an On-site emergency plan containing details specified in Schedule 8A and detailing how major accidents will be dealt with on the site on which the industrial activity or isolated storage 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 authorized to take action in accordance with the plan incase of an emergency.

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

(3) The occupier shall prepare the emergency plan required under sub-rule (1) of this Rule-

(a) before the commencement of industrial activity or isolated storage.

(b) Within 90 days of coming into operation of these Rules in case of an existing industrial activity or isolated storage.

(4) The occupier shall ensure that a mock drill of the on-site emergency is conducted at least once in every six months.

(5) A detailed report of the mock drill conducted under sub-rule (4) shall be made immediately available to the Inspector and Chief Inspector.

14. ** ** **

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 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 Do's 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) of this Rule to inform persons about an industrial activity or isolated storage before that activity is commenced, except that in respect of an existing industrial activity or isolated storage the occupier shall comply with the requirements of sub-Rule(1) of this Rule within 90 days of coming into operation of these Rules.

16. Disclosure of information notified under the Rules

Where for the purpose of evaluating information notified under Rule 5 or Rules 7 to 15, the Inspector or the Chief Inspector discloses that information to some other person, that other person shall not use that information for any purpose except a purpose of the Inspector or the Chief Inspector disclosing it, as the case may be, and before

disclosing that information the Inspector or the Chief Inspector as the case may be shall inform that other person of his obligations under this Rule.

17. ** ** **

18. Power of the State Government to modify the Schedules

The State Government may, at any time, by notification in the Official Gazette, make suitable changes in the Schedules.

19. Repeals and Modifications to the Rules for the Factories (Amendment) Act, 1987

(1) The Rules set out in Part I of Schedule 9 be repealed.

(2) The Rules set out in Part II of Schedule 9 be modified to the extent specified in column 4 of that Schedule.

SCHEDULE I

[see Rules 2(a)(i), 3(1) and 4(1)(a)]

Indicative Criteria and List of Chemicals

Part I INDICATIVE CRITERIA

(a) Toxic Chemicals:

Chemicals having the following values of acute toxicity and which, owing to their physical and chemicals properties, are capable of producing major accident hazards.

Sl.No.	Degree of Toxicity	Medium lethal dose by the oral route (oral toxicity) LD (Mg/kg body weight of test animals)	Medium lethal dose by the dermal route (dermal toxicity) LD 50 (mg.kg body weight of test animals)	Medium lethal concentration by inhalation route (four hours (LC50 (mg/1 inhalation in test animals)
1.	Extremely toxic	1-50	1-200	0.1-0.5
2.	Highly	51-500	201-2000	0.5-2.0

	toxic			

(b) Flammable chemicals:

(i) Flammable gases : Chemicals which in the gaseous state at normal pressure and mixed with air become flammable and the boiling point of which at normal pressure is 20^{O} degree C or below;

(ii) Highly flammable liquids : Chemicals which have a flash point lower than 23^{O}

(iii) Flammable liquids : Chemicals which have a flash point lower than 65^{o} degree C and which remain liquid under pressure, where particular processing conditions, such as high pressure and high temperature, may create major accident hazards.

(c) Explosives :

Chemicals which may explode under the effect of flame, heat or photochemical conditions, or which are more sensitive to shocks or friction than dinitrobenzene.

PART-II LIST OF HAZARDOUS CHEMICALS

(1) ACETONE
(2) ACETONE CYANOHYDRINE
(3) ACETYL CHLORIDE
(4) ACETYLENE (ETHYLENE)
(5) ACROLEIN (2-PROPENAL)
(6) ACRYLONITRILE
(7) ALTICARB
(8) ALDRIN
(9) ALCYL PHTHALATE
(10) ALLYL ALCHOHOL
(11) ALLYLAMINE
(12) ALPHA NAPHTHYL THIOUREA (ANTTU)
(13) AMINODIPHENYL-4
(14) AMINOPHENOL-2
(15) AMIDON
(16) AMMONIA
(17) AMMONIUM NITRATE
(18) AMMONIUM NITRATE IN FERTILIZERS
(19) AMMONIUM SULFAMATE

(20) ANABASINE
(21) ANILINE
(22) ANISIDNIE-p
(23) ANTIMONY & COMPOUNDS
(24) ANTIMONY HIDRIDE (STIBINE)
(25) ARSYNIC HYDRIDE (ARSINE)
(26) ARSYNIC PENTOXIDE, ARSYNIC (V) ACID & SALTS
(27) ARSYNIC TRYOSIDE, ARSENIOUS (III) ACID & SALTS
(28) ASBESTOS
(29) AZINPHOS-ETHYL
(30) AZINPHOS-METHYL
(31) BARIUM AZIDE
(32) BENZENE
(33) BENZIDINE
(34) BENZIDINE SALTS
(35) BENZOQUINONE
(36) BENZOYL CHLORIDE
(37) BENZOYL PHOROXIDE
(38) BENZYL CHLORIDE
(39) BENZYL CYANIDE
(40) BERYLLIUM (POWDERS, COMPOUNDS)
(41) BIPHENYL
(42) BIS (2-CHLOROMETHYLE) KETONE
(43) BIS (2, 4, 6 –TRINITROPHENYL) AMINE
(44) BIS (2-CHLOROETHYL) SULPHIDE
(45) BIS (CHLOROMETHYL) ETHER
(46) 2, 2-BIS (tert– BUTYLPEROXY) BUTANE
(47) 1, 1 – BIS (tert– BUTYLPEROXY) CYCLOHEXANE
(48) BIS – 1, 2 (TRYVROMOPHENOXY) ETHANE
(49) BISPHENOL
(50) BORON & COMPOUNDS
(51) BROMINE
(52) BROMINE PENTA FLOURIDE
(53) BROMOFORM
(54) 1,3-BUTADIENE
(55) BUTANE
(56) N-BUTANETHIOL
(57) 2-BUTANONE
(58) BUTOXY ETHANOL
(59) BUTYL GLYCIDAL EITHER
(60) BUTYL PEROXYISOBUTYRATE tert
(61) BUTYL PEROXYACETATE tert
(62) BUTYL PEROXYISOPROPYL CARBONATE tert
(63) BUTYL PEROXYMALEATIE tert

(64) BUTYL PEROXYPIVALATE tert
(65) BUTYL VINYL ETHER
(66) BUTYL-n-MERCAPTAN
(67) BUTYLAMINE
(68) C9-AROMATIC HYDROCARBON FRACTIONCADMIUM & COMPOUNDS
(69) CADMIUM & COMPOUNDS
(70) CADMIUM OXIDE (fumes)
(71) CALCIUM CYANIDE
(72) CAPTAN
(73) CAPTOFOL
(74) CARBARYL (SEVIN)
(75) CARBOFURAN
(76) CARBON DISULPHIDE
(77) CARBON MONOXIDE
(78) CARBON TETRACHLORIDE
(79) CARBOPHENOTHION
(80) CELLULOSE NITRATE
(81) CHLORATES (used in explosives)
(82) CHLORDANE
(83) CHLORFENVINPHOS
(84) CHLORINATED BENZENES
(85) CHLORINE
(86) CHLORINE DIOXIDE
(87) CHLORINE OXIDE
(88) CHLORINE TRIFLUORIDE
(89) CHLORMEQUATE CHLORIDE
(90) CHLORACETAL CHLORIDE
(91) CHLOROACETALDEHYDE
(92) CHLOROANILINE-2
(93) CHLOROANILE-4
(94) CHLOROBENZENE
(95) CHLORODIPHENYL
(96) CHLOROEPOXYPROPANE
(97) CHLOROETHANOL
(98) CHLOROETHYL CHLOROFORMATE
(99) CHLOROFLUOROCARBONS
(100) CHLOROFORM
(101) CHLOROFORMYL, -4, MORPHOLINE
(102) CHLOROMETHANE
(103) CHLOROMETHYL ETHER
(104) CHLOROMETHYL METHYL ETHER
(105) CHLORONITROBENZENE
(106) CHLOROPRENE

(107) CHLOROSULPHONIC ACID
(108) CHLOROTRINITROBENZENE
(109) CHLOROXURON
(110) CHROMIUM & COMPOUNDS
(111) COBOLT & COMPOUNDS
(112) COPPER & COMPOUNDS
(113) COUMAFURYL
(114) COUMAPHOS
(115) COUMATERALYL
(116) CRESOLS
(117) CRIMIDINE
(118) CUMENE
(119) CYANOPHOS
(120) CYANOTHOATE
(121) CYANURIC FLUORIDE
(122) CYCLOHEXANE
(123) CYCLOHEXANOL
(124) CYCLOHEXANONE
(125) CYCLOHEXAMIDE
(126) CYCLOPENTADIENE
(127) CYCLOPENTANE
(128) CYCLOTETRAMETHYLENETETRANITRAMINE
(129) CYCLOTRIMETHYLENETRINITRAMINE
(130) DDT
(131) DECABROMODIPHENYL OXIDE
(132) DEMETON
(133) Di-ISOBUTYRYL PEROXIDE
(134) Di-n-PROPYL PEROXYDICARBONATE
(135) Di-sec-BUTYL PEROXYDICARBONATE
(136) DIALIFOS
(137) DIAZODINTROPHENOL
(138) DIAZOMETHANE
(139) DIBENZYL PEROXYDICARBONATE
(140) DICHLOROACETYLENE
(141) DICHLOROBENZENE-O
(142) DICHLOROBENZENE-P
(143) DICHLOROETHANE
(144) DICHLOROETHYL ETHER
(145) DICHLOROPHENOL, -2, 4
(146) DICHLOROPHENOL, -2, 6
(147) DICHLOROPHENOXY ACETIC ACID, -2, 4(2, 4-D)
(148) DICHLOROPROPANE, -1, 2
(149) DICHLOROSALICYLIC ACID, -3, 5
(150) DICHLOROVOS (DDVP)

(151) DICROTOPHOS
(152) DIELDRIN
(153) DIEPOXYBUTANE
(154) DIETHYL PEROXYDICARBONATE
(155) DIETHYLENE GLYCOL DINITRATE
(156) DIETHYLENE TRIAMINE
(157) DIETHYLENEGLYCOL BUTYL ETHER/
DIETHYLENEGLYCOLBUTYL ACETATE
(158) DIETHYLENETRIAMINE (DETA)
(159) DIGLYCIDYL ETHER
(160) DIHYDROPEROXYPROPANE, -2, 2
(161) Di-ISOBUTYRYL PEROXIDE
(162) DIMEFOX
(163) DIMETHOATE
(164) DIMETHYL PHOSPHORAMIDOCY ANIDIC ACID
(165) DIMETHYL PHTHALATE
(166) DIMETHYLCARBOMOYL CHLORIDE
(167) DIMETHYLNITROSAMINE
(168) DINITROPHENOL, SALTS
(169) DINITROTOLUENE,
(170) DINITRO-o-CRESOL
(171) DIOXANE
(172) DIOXATION
(173) DIOXOLANE
(174) DIPHACINONE
(175) DIPHOSPHORAMIDE OCTAMETHYL,
(176) DIPROPYLENE GLYCOLMETHYLETHER
(177) DISULFOTON
(178) ENDOSULFAN
(179) ENDRIN
(180) EPICHLOROHYDRINE
(181) EPN
(182) EPOXYPROPANE 1,2
(183) ETHION
(184) ETHYL CARBAMATE
(185) ETHYL ETHER
(186) ETHYL HEXANOL, -2
(187) ETHYL MERCAPTAN
(188) ETHYL METHACRYLATE
(189) ETHYL NITRATE
(190) ETHYLAMINE
(191) ETHYLENE
(192) ETHYLENE CHLOROHYDRINE
(193) ETHYLENE DIAMINE

(194) ETHYLENE DIBROMIDE
(195) ETHYLENE DICHLORIDE
(196) ETHYLENE GLYCOL DINITRATE
(197) ETHYLENE OXIDE
(198) ETHYLENE IMINE
(199) ETHYLTHIOCYANATE
(200) FENSULPHOTHION
(201) FLUENETIL
(202) FLUORO, -4, -2-HYDROXYBUTYRIC ACID & SALTS, ESTERS, AMIDES
(203) FLUOROACETIC ACID & SALTS, ESTERS, AMIDES
(204) FLUOROBUTYRIC ACID, -4, & SALTS, ESTERS, AMIDES
(205) FLUOROCHROTONIC ACID, -4 & SALTS, ESTERS, AMIDES
(206) FORMALDEHYDE
(207) GLYCOLONITRILE (HYDROXYACETONITRILE)
(208) GUANYL, -1, -4-NITROSAMINOGUANYL-TETRAZENE
(209) HEPTACHLOR
(210) HEXACHLORO CYCLOPENTADIENE
(211) HEXACHLOROCYCLOHEXANE
(212) HEXACHLOROCYCLOMETHANE
(213) HEXACHLORODIBENZO-p-DIOXINE 1,2,3,7,8,9
(214) HEXAFLUOPROPENE
(215) HEXAMETHYLPHOSPHORAMIDE
(216) HEXAMETHYL, -3,3,6,9,9-1,2,4,5 – TETROXACYCLOMONANE
(217) HEXAMETHYLENEDIAMINE
(218) HEXANE
(219) HEXANITROSTILBENE
(220) HEXAVALENT CHROMIUM
(221) HYDRAZINE
(222) HYDRIZINE NITRATE
(223) HYDROCHLORIC ACID
(224) HYDROGEN
(225) HYDROGEN BROMIDE (HYDROBROMIC ACID)
(226) HYDROGEN CHLORIDE (LIQUIFIED GAS)
(227) HYDROGEN CYANIDE
(228) HYDROGEN FLUORIDE
(229) HYDROGEN SELENIDE
(230) HYDROGEN SULPHIDE
(231) HYDROQUINONE
(232) IODINE
(233) ISOBENZAN
(234) ISODRIN
(235) ISOPHORONE DIISOCYANATE
(236) ISOPROPYL LETHER

(237) JUGLONE (5-HYDROXYNAPHTHALENE-1, 4-DIONE)
(238) LEAD (INORGANIC FUMES & DUSTS)
(239) LEAD 2, 4, 6-TRINITRORESORCINOXIDE (LEAD STYPHNATE)
(240) LEAD AZIDE
(241) LEPTOPHOS
(242) LINDANE
(243) LIQUEFIED PETROLEUM GAS (LPG)
(244) MALEIC ANHYDRIDE
(245) MANGANESE & COMPOUNDS
(246) MERCAPTO BENZOTHIAZOLE
(247) MERCURY ALKYL
(248) MERCURY FULMINATE
(249) MERCURY METHYL
(250) METHACRYLIC ANHYDRIDE
(251) METHACRYLONITRILE
(252) METHACRYLOYLCHLORIDE
(253) METHAMIDOPHOS
(254) METHANESSUPHONYL FLOURIDE
(255) METHANETHIOL
(256) METHOXY ETHANOL (2-METHYL CELLOSOLVE)
(257) METHOXYETHYMERCURIC ACETATE
(258) METHYL ACRYLATE
(259) METHYL ALCOHOL
(260) METHYL AMYLKETONE
(261) METHYL BROMIDE (BROMOMETHANE)
(262) METHYL CHLORIDE
(263) METHYL CHLOROFORM
(264) METHYL CYCLOHEXENE
(265) METHYL ETHYL KETONE PEROXIDE
(266) METHYL HYDRAZINE
(267) METHYL ISOBUTYL KETONE
(268) METHYL ISOBUTYL KETONE PEROXIDE
(269) METHYL ISOCYANATE
(270) METHYL ISOTHIOCYANATE
(271) METHYL MERCAPTAN
(272) METHYL METHACRYLATE
(273) METHYL PARATHION
(274) METHYL PHOSPHONIC DICHLORIDE
(275) METHYL-N, 2,4,6-TETRANITROANLINE\
(276) METHYLENE CHLORIDE
(277) METHYLENEBIS-4,4,(2-CHLOROANLINE)
(278) METHYL TRICHLOROSILANE
(279) MEVINPHOS
(280) MOLYBDENUM & COMPOUNDS

(281) N-METHYL-N-2,4,6-TETRAITROANILINE
(282) NAPHTHA (COAL TAR)
(283) NAPHTHLAMINE,2
(284) NICKEL & COMPOUNDS
(285) NICKEL TETRACARBONYL
(286) NITROANILINE-O
(287) NITROANILINE-P
(288) NITROBENZENE
(289) NITROCHLOROBENZENE-P
(290) NITROCYCLOHEXANE
(291) NITROETHANE
(292) NITROGEN DIOXIDE
(293) NITROGEN OXIDES
(294) NITROGEN TRIFLUORIDE
(295) NITROGLYCERINE
(296) NITROPHENOL-P
(297) NITROPROPANE-1
(298) NITROPROPANE-2
(299) NITROSODIMETHYLAMINE
(300) NITROTOLUNE
(301) OCTABROMOPHENYL OXIDE
(302) OLEUM
(303) OLEYLAMINE
(304) OO-DIETHYL S-ETHYLSULPHONYLMETHYL
(305) OO-DIETHYL S-ETHYLSULPHONYLMETHYL PHOSPHOROTHIOATE
(306) OO-DIETHYL S-ETHYLTHIOMETHYL PHOSPHOROTHIOATE
(307) OO-DIETHYL S-ISOPROPYLTHIOMETHYL PHOSPHOROTHIOATE
(308) OO-DIETHYL S-PROPYLTHIOMETHYL PHOSPHOROTHIOATE
(309) OXYAMYL
(310) OXYDISULFOTON
(311) OXYGEN (LIQUID)
(312) OXYGEN DIFLUORIDE
(313) OZONE
(314) PARAOXON (DIETHYL 4-NITROPHENYL PHOSPHATE)
(315) PARAQUAT
(316) PARATHION
(317) PARATHION METHYL
(318) PARIS GREEN (BIS ACETO HEXAMETAARSENITOTETRA COPPER)
(319) PENTABORANE
(320) PENTAROMODIPHENYL OXIDE
(321) PENTABROMOPHENOL

(322) PENTACHLORO NAPHTHALENE
(323) PENTACHLOROETHANE
(324) PENTACHLOROPHENOL
(325) PENTAERYTHRITOL TETRANITRATE
(326) PENTANE
(327) PERACETIC ACID
(328) PERCHLOROETHYLENE
(329) PERCHLOROMETHYL MERCAPTAN
(330) PENTANONE, 2, 4-METHYL
(331) PHENOL
(332) PHENYL GLYVCIDAL ETHER
(333) PHENYLENE P-DIAMINE
(334) PHENYLMERCURY ACETATE
(335) PHORATE
(336) PHOSACETIM
(337) PHOSALANE
(338) PHOSFOLAN
(339) PHOSGENE (CARBONYL CHLORIDE)
(340) PHOSMET
(341) PHOSPHAMIDON
(342) PHOSPHINE (HYDROGEN PHOSPHIDE)
(343) PHOSPHORIC ACID AND ESTERS
(344) PHOSPHORIC ACID, BROMOETHYL BROMO (2,2-DIMETHYLPROPYL) BROMOETHYL ESTER
(345) PHOSPHORIC ACID, BROMOETHYL BROMO (2,2-DIMETHYLPROPYL) CHLOROETHYL ESTER
(346) PHOSPHORIC ACID CHLOROETHYLBROMO (2,2-DIMETHYLPROPYL) CHLOROETHYL ESTER
(347) PHOSPHOROUS & COMPOUNDS
(348) PHOSTALAN
(349) PICRIC ACID (2,4,6-TRINITROPHENOL)
(350) POLYBROMINATED BIPHENYLS
(351) POTTASIUM ARSENITE
(352) POTASSIUM CHLORATE
(353) PROMURIT (1-(3,4-DICHLOROPHENYL)-3 TRIAZENETHIOCARBOXAMIDE)
(354) PROPANESULTONE-1,3
(355) PROPEN-2-CHLORO-1,3-DIOU DIACETATE
(356) PROPYLENE DICHLORIDE
(357) PROPYLENE OXIDE
(358) PROPYLENE IMINE
(359) PRYAZOXON
(360) SELENIUM HEXAFLUORIDE
(361) SEMICARBAZIDE HYDROCHLORIDE

(362) SODIUM ARSENITE
(363) SODIUM AZIDE
(364) SODIUM CHLORATE
(365) SODIUM CYANIDE
(366) SODIUM PICRAMATE
(367) SODIUM SELENATE
(368) STYRENE, 1,1,2,2-TETRACHLOROETHANE
(369) SULPHOTEP
(370) SULPHUR DICHLORIDE
(371) SULPHUR DIOXIDE
(372) SULPHUR TRIOXIDE
(373) SULPHURIC ACID
(374) SULPHOXIDE 3-CHLOROPROPYL OCTYL
(375) TELLURIUM
(376) TELLURIUM HEXAFLUORIDE
(377) TEPP
(378) TERBUFOS
(379) TERABROMOSBISPHENOL-A
(380) TETRACHLORO, 2,2,5,6,2,5-CYCLOHEXADIENE-1,4-DIONE
(381) TETRACHLORODIBENZO-p-DIOXIN 2,3,7,8 (TCDD)
(382) TETRAETHYL LEAD
(383) TETRAFLUORIETHYNE
(384) TETRAMETHYLENE DISULPHOTETRAMINE
(385) TETRA METHYL LEAD
(386) TETRA NITROMETHANE
(387) THALLIUM & COMPOUNDS
(388) THIONAZIN
(389) THIONYL CHLORIDE
(390) TIRPATE
(391) TOLUENE
(392) TOLUENE 2.4-DIISOCYANATE
(393) TOLUIDINE-O
(394) TOLUENE 2,6-DIISOCYANATE
(395) TRANS-1,4-DI CHLORO-BUTENE
(396) TRI-I ()
(397) TRIAMINO, 1,3,5,2,4,6-TRINITROBENZENE
(398) TRIBROMOPHENOL 2,4,6
(399) TRICHLORO ACETYL CHLORIDE
(400) TRICHLOROETHANE
(401) TRICHLORO NAPTHALENE
(402) TRICHLORO (CHLOROMETHYL) SILANE
(403) TRICHLORODICHLOROPHENYLSILANE
(404) TRICHLOROETHANE 1,1,1
(405) TRICHLOROETHYL SILANE

(406) TRICHLOROETHYLENE
(407) TRICHLOROMETHANE SULPHENYL CHLORIDE
(408) TRICHLOROPHENOL 2, 2, 6
(409) TRICHLOROPHENOL 2, 4, 5
(410) TRIETHYLAMINE
(411) TRIETHYLENE MELAMINE
(412) TRIMETHYL CHLOROSILANE
(413) TRIMETHYL PROPANE PHOSPHITE
(414) TRINITRO ANILINE
(415) TRINITRO ANISOLE 2,4,6
(416) TRINITRO BENZENE
(417) TRINITRO BENZOIC ACID
(418) TRINITROCRESOL
(419) TRINITRO PHENETOLE2,4,6
(420) TRINITRORESORCINOL 2,4,6 (STYPHNICACID)
(421) TRI ORTHOCRESYL PHOSPHATE
(422) TRIPHENYL TIN CHLORIDE
(423) TURPENTINE
(424) URANIUM & COMPOUNDS
(425) VANADIUM & COMPOUNDS
(426) VINYL CHLORIDE
(427) VINYL FLUORIDE
(428) VINYL TOLUENE
(429) VINYLEDENE CHLORIDE
(430) WARFARIN
(431) XYLENE
(432) XYLIDINE
(433) ZINC& COMPOUNDS
(434) ZIRCONIUM & COMPOUNDS

SCHEDULE 2

[See Rule 2(a)(ii), 4(1)(b) and 6(1)(c) and (d)]

Isolated storage of Installation other than those covered by Schedule 4.

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 of the installations belonging to

the same occupier where the distance between the installations is less than 500 metres.

b. For the purpose of determining the 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 occupier having control of the site, which is 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 for transporting it.

Sl. No.	Chemicals	Threshold Quantities (tonnes)	
		For application of Rules 4,5,7	For application of Rules 10 to 15
1.	2.	3.	4.
1.	Acrylonitrile	350	5000
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
7.	Highly flammable liquids as defined in Schedule 1, paragraph (b)(ii)	10,000	10,000
8.	Liquid oxygen	200	2000
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	5	50
15.	Hydrogen cyanide	5	20
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 (Liquified gas)	25	250

Sl. No.	Chemicals	Threshold Quantities (tonnes)	
		For application of Rules 4,5,7 & 8	For application of Rules 10 to 15
1.	2.	3.	4.
26.	1,2 Diphynel methane di-isocyanate (MDI)	20	200
27.	Tolune di-isocyanate (TDI)	10	100

Foot notes:

(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 percent by weight.

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

SCHEDULE 3

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

List of Hazardous Chemicals for Application of Rules 5 and 7 to 15

c. (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 of the installations belonging to the same occupier where the distance between the installations is less than 500 metres.

d. For the purpose of determining the quantity of a hazardous chemical at an isolated storage, account shall also be taken of any hazardous chemical which is : -

(iv) 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,

(v) at any other site under the control of the occupier having control of the site, which is 500 metres of the said site, and

(vi) 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 for transporting it.

Sl.No.	Chemical	Threshold Quantity		CAS Number
		For application of Rules 5,7,8,13 and	For application of Rules 10 to 12	
1.	2.	3.	4.	5.
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		
5.	Arsynic pentoxide, arsynic (v) acid & salts	500 kg		
6.	Arsynictryoside, arsenious (iii) acid & salts	100 kg		
7.	Arsine (Arsynic 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		
12.	Beryllium (powders, compounds)	10 kg		
13.	Bis (2-chloroethyl) sulphide	1 kg		55-60-2
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.	Chloroformyl, -4, morpholine	1 kg		15159-40-7
19.	Chloromethyl methyl ether	1 kg		107-30-2
20.	Cobolt metal, oxides, carbonates, sulphides as powders	1 t		
21.	Crimidine	100 kg		535-89-7
22.	Cyanthoate	100 kg		3734-95-0
23.	Cyclohexamide	100 kg		66-81-9
24.	Demeton	100 kg		8065-48-3
25.	Dialifos	100 kg		10311-84-9
26.	oo-Diethyl S-ethylsulphinyl methyl phosphorothioate	100 kg		2588-05-8
27.	oo-Diethyl S-ethylsulphonyl methyl phosphorothioate	100 kg		2588-06-9
28.	oo-Diethyl S-ethylthiomethylphosphorodithioate	100 kg		2600-06-9
29.	oo-Diethyl S-isopropylthylthiomethylphosphorodithioate	100 kg		78-52-4
30.	oo-Diethyl S-propylthylthiomethylphosphorodithioate	100 kg		3309-68-0
31.	Dimefox	100 kg		115-26-4
32.	Dimethylcarbomoyl chloride	1 kg		79-44-7
33.	Dimethylnitrosamine	1 kg		62-57-9
34.	Dimethyl phosphoramidocyanidic 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.	Fensulphothion	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		
47.	4-Fluorobutyric acid, esters	1 kg		
48.	4-Fluorocrotonic acid, amides	1 kg		
49.	4-Fluorocrotonic acid	1 kg		37759-72-1
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-dioxine	100 kg		19408-74-3
59.	Hexamethylphosphoramide	1 kg		680-31-9
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.	Methylenebis-4,4,(2-chloroanline)	10 kg		101-14-4
65.	Methyl isocyanate	150 kg	150 kg	624-83-9
66.	Mevinphos	100 kg		7786-34-7
67.	Naphthlamine, 2	1 kg		91-59-8
68.	Nickel metal, oxides, carbonates, sulphide, as powders	1 t		
69.	Nickel tetra carbonyl	10 kg		13463-39-3

70.	Oxydisulfoton	100 kg		2497-07-6
71.	Oxygen diflouride	10 kg		7783-41-7
72.	Paraxon (diethyl 4-nitorphenyl 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 phosphide)	100 kg		7803-51-2
81.	Promurit (1-(3,4-dichlorophenyl)-3 triazenethiocarboxamide)	100 kg		5836-73-7
82.	Propanesultone-1,3	1 kg		1120-71-4
83.	Propen-2-chloro-1,3-diou diacetate	10 kg		10118-72-6
84.	Pryazoxon	100 kg		108-34-9
85.	Selenium hexafluoride	10 kg		7783-79-1
86.	Sodium selenite	100 kg		10102-18-8
87.	Stibine (Antimony hydride)	100 kg		7803-52-3
88.	Sulphotop	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.	Tetrachlorodibenzo-p-dioxin 2,3,7,8 (TCDD)	1 kg		1746-01-6
93.	Tetramethylene-disulphotetramine	1 kg		80-12-6
94.	Thionazin	100 kg		297-97-2
95.	Tirpate (2,4-Dimethyl-1,3-dithiolane-2-carboxaldehyde O-methylcarbomoyloxime))	100 kg		26419-73-8
96.	Trichloromethanesulphenyl chloride	100 kg		594-

				42-3
97.	1-Tri(cyclohexyl) stannyl-IH-1,2,4-triazole	100 kg		41083-11-8
98.	Triethylene melamine	10 kg		51-18-3
99.	Warfarin	100 kg		81-81-2
Group 2-Toxic Chemicals				
100.	Acetone cyanohydrine (2-Cyanoproan-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 alchohol	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	500 t	7726-95-6
107.	Carbon disulphide	20 t	200 t	75-15-0
108.	Chlorine	10 t	25 t	7782-50-5
109.	Diphyenl methane di-isocyanate (MDI)	20 t	200 t	101-68-8
110.	Ethylene dibromide (1,2-Dibromoethane)	5 t	50 t	106-93-4
111.	Ethyleneimine	50 t		151-56-4
112.	Formaldehyde (concentration>=90%)	5 t	50 t	50-00-0
113.	Hydrogen chloride (liquified gas)	25 t	250 t	7647-01-0
114.	Hydrogen cyanide	5 t	20 t	74-90-8
115.	Hydrogen fluoride	5 t	50 t	7664-39-3
116.	Hydrogen sulphide	5 t	50 t	7783-06-4
117.	Methyl bromide (bromomethane)	20 t	200 t	74-83-9
118.	Nitrogen oxides	50 t		11104-93-1
119.	Propyleneimine	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.	Tetraethyl lead	5 t		78-00-2
123.	Tetra methyl lead	5 t	200 t	75-74-1
124.	Toluene 2.4-di-isocyanate(TDI)	10 t	100 t	584-84-9 75-01-4
Group 3- Highly Reactive Chemicals				
125.	Acetylene (ethylene)	5 t		74-86-2
126.	a. Ammonium nitrate(1) b. Ammonium nitrate in the form of fertilizers(2)	350 t 1250 t	2500 t	6484-52-2
127.	2, 2-bis (tert– butyl-peroxy) butane (concentration>=70%)	5 t		2167-23-9
128.	1, 1 – bis (tert– butylperoxy) cyclohexane (concentration>=70%)	5 t		3006-86-8
129.	Tert Butyl peroxyacetate (concentration>=70%)	5 t		107-71-1
130.	Tert Butylperoxyisobutyrate (concentration>=80%)	5 t		109-13-7
131.	Tert Butylperoxyisopropyl carbonate (concentration>=80%)	5 t		2372-21-6
132.	Tert Butyl peroxymaleate (concentration>=80%)	5 t		1931-62-0
133.	Tert Butylperoxypivalate (concentration>=77%)	50 t		927-07-1
134.	Dibenzylperoxydicarbonate (concentration>=90%)	5 t		2144-45-8
135.	Di-sec-butyl peroxydicarbonate (concentration>=80%)	5 t		19910-65-7
136.	Diethyl peroxydicarbonate (concentration>=30%)	50 t		14666-78-5
137.	Dihydroperoxypropane, -2, 2 (concentration>=30%)	5 t		2614-76-8
138.	Di-isobutryl peroxide (concentration>=50%)	50 t		3437-84-1
139.	Di-n- propyl peroxydicarbonate (concentration>=80%)	5 t		16066-38-9
140.	Ethylene oxide	5 t		75-21-8
141.	Ethyl nitrate	50 t		625-58-1
142.	3,3,6,9,9-Hexamethyl, -1,2,4,5 – tetroxacyclomonane (concentration>=75%)	50 t		22397-33-7

143.	Hydrogen	2 t	50 t	1333-74-0
144.	Liquid oxygen	200 t	2000 t	7782-44-7
145.	Methyl ethyl ketone peroxide (concentration>=60%)	5 t		1338-23-4
146.	Methyl isobutyl ketone peroxide (concentration>=60%)	50 t		37206-20-5
147.	Peracetic acid	50 t		79-21-0
148.	Propylene oxide	5 t	50 t	75-56-9
149.	Sodium chlorate	25 t		7775-09-9
Group 4 – Explosive Chemicals				
150.	Barium azide	50 t		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 > 12.6% nitrogen)	50 t		9004-70-0
154.	Cyclotetramethylenetetranitramine	50 t		2691-41-0
155.	Cyclotrimethylenetrinitroamine	50 t		121-82-4
156.	Diazodintrophenol	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-tetrazene	10 t		109-27-3
161.	2,2',4,4',6,6'-Hexanitrostilbene	50 t		20062-22-0
162.	Hydrizine nitrate	50 t		13464-97-6
163.	Lead azide	50 t		13424-46-9
164.	Lead styphnate (Lead 2, 4, 6-trinitroresorcinoxide)	50 t		15245-44-0
165.	Mercury fulminate	10 t		208-2-45-5 628-

				86-4
166.	N-methyl-N-2,4,6-tetraitroaniline	50 t		479-45-8
167.	Nitroglycerine	10 t	10 t	55-63-0
168.	Pentaerythritoltetranitrate	50 t		78-11-5
169.	Picric acid (2,4,6-trinitrophenol)	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.	Trinitro aniline	50 t		26952-42-1
174.	2,4,6Trinitro anisole	50 t		606-35-9
175.	Trinitro benzene	50 t		25377-32-6
176.	Trinitro benzoic acid	50 t		35860-50-5 129-66-8
177.	Trinitrocresol	50 t		28905-71-7
178.	2,4,6-Trinitro phenetole	50 t		4732-14-3
179.	2,4,6-Trinitroluene	50 t	50 t	118-96-7

PART – II CLASSES OF CHEMICALS NOT SPECIFICALLY NAMED IN PART-I

Sl.No.	Chemical	Threshold Quantity		CAS Number
		For application of Rules 5,7,8,13 and	For application of Rules 10 to 12	
1.	2.	3.	4.	5.
Group –5-Flammable Chemicals				
1.	Flammable Gases: Chemicals which in gaseous state at normal pressure and	15 t	200 t	

	mixed with air become flammable and the boiling point of which at normal pressure is 20 degree C or below;			
2.	Highly flammable liquids: Chemicals which have a flash point lower than 23 degree C and the boiling point of which at normal pressure is above 20 degree C;	1000 t	50000 t	
3.	Flammable liquids: Chemicals which a flash point lower than 65 degree C and which remain liquid under pressure, where particular processing conditions, such as high pressure and high temperature, may create major accident hazards.	25 t	200 t	

Footnotes:

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(b)(1)]

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

(a) alkylation

(b) amination by amonolysis
(c) carbonylation
(d) condensation
(e) dehydrogenation
(f) esterification
(g) halogenation& 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. Factories involved in distillation, refining or other processing of petroleum or petroleum products.

3. Factories involved in the total or partial disposal of solid or liquid chemicals by incineration or chemical decomposition.

4. Factories involved in the production, processing or treatment of energy gases, for example, LPG, LNG, SNG.

5. Factories involved in the dry distillation of coal or ignite.

6. Factories involved in the production of metals or non-metals by a wet process or by means of electrical energy.

SCHEDULE 5

Format of a Material Safety Data Sheet

[See Rule 3(2) and (3)]

1. IDENTITY OF MATERIAL

Product Name	Chemical Classification
Trade name	Synonyms

Formula	Label: Category class	CAS Number	UN Number

Regulated Identification	Shipping Name Codes/ Label	HAZCHEM Code:
	Hazardous Waste Identification Number	

Hazardous Ingredients	CAS Number
(1)	
(2)	
(3)	
(4)	

2. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: (Gas, Liquid, Solid)	Boiling Point in degree C	Vapour Pressure at 35 degree C …..…….. mm Hg.
Appearance	Melting/ Freezing Point in degree C	Evaporation rate at 30 degree C
Odour	Vapour Density (air=1)	Solubility in water at 30 degree C.
Others (corrosivity, etc.)	Specific Gravity	pH

3. FIRE AND EXPLOSIVE HAZARDS DATA

Explosion / Flammability	Flash Point (deg.) C	LEL %	Auto ignition Temperature degree C
	Flash Point (deg.) C	ULEL %	TDG Flammability (Classification)

4. REACTIVE HAZARDS

Stability To	Impact	(Hazardous Combustion Products)
	Static Discharge	(Hazardous Decomposition Products)
	Reactivity	(conditions to avoid)
Hazardous Polymerisation	May/May not accur	(conditions to avoid)
Incompatibility	Materials to avoid	

5. HEALTH HAZARD DATA

Routes of Entry : (inhalation, skin, membranes and eye contact and ingestion)
Effects of Exposure/ Symptoms :

LD50 (in rat) (Orally or persutaneous absorption) Mg/kg body weight)	LC50(in rat) (mg/1) / 4 hours

Permissible Exposure ppm mg/cu.m Limit Threshold Limit ppm/mg.m Value (TLV) of ACGIH	Short Term ppm mg/cu.m Exposure Limit (STEL) Odour ppm mg/cu.m Threshold

Emergency Treatment :

6. HAZARD SPECIFICATION

NFPA Hazard	Health	Flammability	Stability	Special

Signal				

Known hazards

Combustible Liquid	Water Reaction Material	Irritant
Flammable material	Oxidizer	Sensitizer
Pyrophoric material	Organic peroxide	Carcinogen
Explosive material	Corrosive Material	Mutagen
Unstable material	Compressed Gas	Others (Specify)

7. SAFE USAGE DATA

Ventilation	General/ Mechanical
	Local Exhaust
Protective equipment required	Eyes (Specify)
	Respiratory (Specify)
	Gloves (Specify)
	Clothing (Specify)
	Others (Specify)
Precautions	Handling & Storage (Specify)
	Others (Specify)

8. EMERGENCY RESPONSE DATA

Fire	Fire Extinguishing Media
	Special Procedure
	Unusual Hazards
Exposure (inhalation, skin and eye contact, ingestion)	Fire Aid Measures
Spills	Steps to be taken
	Waste Disposal Method

9. ADDITIONAL INFORMATION

10. SOURCES USED

Reference to books, journals, etc.

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11. MANUFACTURER/ SUPPLIER DATA

Firm's Name Mailing Address Telephone Number Telex Number Telegraphic Address Contact Person in Emergency	Standard Packing
	Other
	Other
	Emergency Tel. In Transit Area

Acronyms and Glossary of terms :

CAS : Chemical Abstract Service Registration Number

UN Number | United Nations Number

HAZCHEM Code : Emergency Action Code (EAC), allocated by the Joint Committee of Fire Brigade Operations, UK.

TDG Flammability : Transport of Dangerous Goods – Flammability Classification by United Nations.

NEPA | National Fire Protection Association, USA.

LD50 and LC50 represent the dose in mg/kg of body weight and the concentration in mg/1 for 4 hours having lethal effect on 50% of the animals (rats) treated

PEL: Permissible Exposure Limit as laid down in the statutes or by the ACGIH.

TLV : Threshold Limit Value as laid down by the American Conference of Governmental Industrial Hygienists, (ACGIH), USA.
STEL : Short Term Exposure Limit as laid down in the statutes or by ACGIH.

GUIDELINES :

All efforts should be made to fill in all the columns. No column should be left blank. In case certain information is not applicable or available. N/App. or N/Av. Sign may be used.

SCHEDULE 6

[See Rule 5 (1)]

Information to be furnished regarding Notification of a Major Accident

Report number ……
of the particular accident

1. General data.

(c) Name of the site

(d) Name and address of the occupier
(Also state the telephone/ telex number)

(e) (i) Registration number

(ii) Licence Number
(As may have been allotted under any
statute applicable to the site, e.g. the Factories Act)

(f) (i) Nature of industrial activity
(Mention what is actually manufactured, stored, etc.)

(ii) National Industrial Classification, 1987 at the four digit level

2. Type of major accident Explosion

Explosion	Fire	Name of the Hazardous chemical

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 under taken in the department/ section where the accident took place. (Attach a flow chart, if necessary)

(d) The circumstances of the accident and the hazardous chemical 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

- casualities ……. Killed

……. Injured

……. Poisoned

- persons exposed to the major accident ……

☐ - material damage

☐

- the danger is still present

☐ - danger no longer exists

(b) Outside the establishment

- casualities ..... Killed

..... Injured

..... Poisoned

- persons exposed to the major accident .....

☐ - damage to environment

☐ - the danger is still present

☐ - danger no longer exists

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

8. Steps already taken or envisaged

(g) to alleviate medium or long term effects of the accidents
(h) to prevent recurrence of similar major accidents
(i) any other relevant information.

SCHEDULE 7

[See Rule 7 (1)]

Information to be furnished for the Notification of Activities/ Sites

1. The name and address of the occupier 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 Schedule 2(b) and Schedule 3(b).

4. The data 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 hazardous chemical for which notification is being made.

6. Organisation structure, namely, organization 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 of 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 quantity of all significant inventories of the hazardous chemicals;

(c) A description of the processes or storages involving the hazardous chemicals, the maximum amount of such a hazardous chemical in the given process or storage 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.

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 on physical and chemical properties, safety related data on explosive limits, flash point, thermal stability, toxicological data and threshold limit values, lethal concentrations)

(b) the form in which the chemicals may occur 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) type 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 tanks,
(f) sprinkler systems,
(g) fire protection.

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 organizational systems used to carry on 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, implement 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 organization used to fight the emergency, the alarm and the communications routes,

guidelines for fighting the emergency, examples of possible accident sequences,

(d) coordination with the District Collector or the District Emergency Authority and its off-site emergency plan,

(e) notification of the nature

Schedule 8A

[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 organization and responsibilities assigned to them in case of an emergency.
3. Outside organization if involved in assisting during on-site emergency.
   (a) Type of accidents
   (b) Responsibility assigned.
4. Details of liaison arrangement between the organizations.
5. Information on the preliminary hazard analysis

(a) Type of accidents
(b) System elements or events that can lead to a major accident
(c) Hazards
(d) Safety relevant components

6. Details about the site

(a) Location of dangerous substances
(b) Seat of key personnel
(c) Emergency control room

7. Description of hazardous chemicals at plant site.

(a) Chemicals (Quantities and toxicologies 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 operation;
   (ii) fire and explosion inside the plant and effect if any, or fire and explosion outside.

10. Details regarding

(i) Warning, alarm & safety and security systems;

(ii) Alarm and hazard control plans in line with disaster control and hazard control planning, ensuring the necessary technical and organizational precautions;

(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 recognized rules of good 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 9

[See Rule 19(1) & (2)]

PART I. MODEL RULES TO BE REPEALED

Sl.No.	Model Rule No.	Title
1.	82 C	Collection, development and dissemination of information
2.	82 E	Disclosure of information to general public
3.	82 F	Disclosure of information to the Local Authority
4.	82 I	Emergency Plan
5.	82 J	Disaster Control and Management Plan

PART II MODEL RULES TO BE MODIFIED

Sl.No.	Model Rule No.	Title	Modification Suggested
1.	82 H	Disclosure of	The modified sub rule (1)

		information to the Chief Inspector.	will read as “the occupier of every factory carrying on ‘hazardous process’ shall furnish, in writing, to the Chief Inspector, a copy of all the information furnished to the workers”.
2.	82 K	Information on Industrial Wastes	The modified sub rule (1) will read as “the information furnished under Rule 82 D and 82 H shall include the quantity of the solid and liquid wastes generated per day, their characteristics and the method of treatment such as incineration of solid wastes, chemicals and biological treatment of liquid wastes and arrangements for their final disposal”.
3.	82 L	Review of the information furnished to workers, etc.	The modified sub rule (1) will read as “the occupier shall review once in every calendar year and modify, if necessary, the information furnished under Rule 82 D and 82 H to the workers and the Chief Inspector”.
4.	82 M	Confidentiality of information	The modified sub rule (1) will read as “the occupier of a factory carrying on ‘hazardous process’ shall disclose all information needed for protecting safety and health of the workers to – (a) his workers; and (b) Chief Inspector as required under Rules 82 D and 82 H. If the occupier is of the opinion that the disclosure of the details regarding the process and details regarding the process and formulations will adversely affect his business interests, he may make representation to the

			Chief Inspector stating the reasons for withholding such information. The Chief Inspector shall give an opportunity to the occupier of being heard and pass an order to the representation. An occupier aggrieved by an order of Chief Inspector may prefer a appeal before the State Government within a period of 30 days. The State Government shall give an opportunity to the occupier of being heard and pass an order. The order of the State Government shall be final".

FOOT NOTE:

After deleting the Model rules 82 E, 82 F, 82 G, 82 J and 82 I the remaining Model Rules may be renumbered suitably.