(GARUDA EMBLEM)

The Notification Of
The Ministry Of Industry No. 6 [B.E. 2540 (1997)]
Issued Pursuant To
The Factory Act B.E. 2535 (1992)]
Subject: Disposal Of Wastes Or Unusable Materials

(Unofficial Translation)

By virtue of Article 13(3), Article 13(3)(a) and Article 13(3)(b) of the Ministerial Regulations No. 2 [B.E. 2535 (1992)] issued pursuant to the Factory Act B.E. 2535(1992), the Minister of Industry issues a notification as follows :-

Article 1. Factory operators having wastes or unusable materials which have such characteristics and properties as defined in Annex 1 hereto must carry out the disposal of the wastes or unusable materials as defined in Article 2 and Article 3.

Article 2. The wastes or unusable materials under Article 1 shall not be taken out of the factory except with prior approval from the Director-General of Industrial Works Department or the person assigned by Director-General of Industrial Works Department to take them out to detoxify, dispose, discard or landfill by method and at the place according to the criterion and the method defined in Annex 2 hereto.

Article 3. Details on type, quantity, characteristics, properties and storing place of the wastes or unusable materials concerned as well as method of storage, detoxification, disposal, discarding, landfilling and transport according to "Form Ror. Ngor. 6", attached hereto must be notified to the Department of Industrial Works within the limit of 90 days from the effective date hereof, except that factory operators who operate a factory after the effective date hereof shall notify within the limit of 90 days from the commencing date of factory operation.

The details under paragraph one must be further notified every year by 30th day of December and this notice may be done by receipt-returned registered mail, which shall be deemed to be received on the date delivered by the postman.

This shall, thus, come into force after the date of the publication hereof in the Royal Government Gazette.

Announced on the 29th October 1997.

(Signed): Kom Thappharangsi
(Mr. Kom Thappharangsi)
Minister of Industry.

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CHARACTERISTICS AND PROPERTIES OF HAZARDOUS WASTES, AS DEFINED UNDER THE NOTIFICATION OF MINISTRY OF INDUSTRY NO. 6 B.E. 2540 (1997)

[issued pursuant to Factory Act B.E. 2535 (1992)]

Item 1

Hazardous Wastes: Ignitable, Corrosive, Reactive, Toxic and Leachable Substances

1. Characteristic of ignitibility:

1.1 It is liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has flash point less than 60ºC (140ºF), as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80, or a Setaflash Closed Cup Tester, using the test method specified in ASTM Standard D-3278-78.

1.2 It is not liquid and is capable, under standard temperature and pressure of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard at standard temperature and pressure (at 1 atm and 0°C).

1.3 It is an ignitable compressed gas defined as any materials or mixturers are in the container which has absolute pressure greater than 2.81 kilogram per square centimeter (40 pound per square inch) at 21°C (70°F) or has absolute pressure greater than 7.31 kilogram per square centimeter (104 pound per square inch) at 55°C (130°F) as determined by the test or analytical method specified in ASTM Standard D-323.

1.4 It is an oxidizer defined as wastes which may generally by yielding oxygen cause or contribute to the combustion of organic substances i.e. chlorate permanganate in organic peroxide and nitrate compounds.

2. Characteristic of corrosivity:

2.1 It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5 as determined by a pH meter, using US EPA method 9040.

2.2 It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 millimeter (0.25 inch) per year at a test temperature of 55 ºC (130 ºF) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69.

3. Characteristic of reactivity:

3.1 It is normally unstable and readily undergoes violent change without detonating.

3.2 It reacts violently with water.

3.3 It forms potentially explosive mixtures with water.

3.4 When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

3.5 It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 11.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

3.6 It is capable of detonation or explosive reaction if it is heated under confinement or at standard temperature and pressure (at 1 atm and 0°C).

4. Toxicity characteristic:

4.1 It has been found to be fatal to humans in low doses as determined by the toxicity test specified in US EPA method.

4.2 It has an oral LD 50 toxicity (rat) of less than 50 milligram per kilogram, an inhalation LC 50 toxicity (rat) of less than 100 parts per million, or a dermal LD 50 toxicity (rabbit) of less than 43 milligram per kilogram.

4.3 It is arisen from manufactures, which has or contaminants with carcinogen according to lists in Group 1, 2A and 2B of International Agency for Research on Cancer.

4.4 It has an aquatic LC 50 toxicity less than 5 milligram per liter in 96 hours.

4.5 It is diluted to concentration less than 20%, but still has an LC 50 toxicity in 96 hours.

5. Leachability characteristic: leachable substances which is extracted by leachate extraction procedure and analysis method specified in Annex II (3) of the Notification of Ministry of Industry No. 6 B.E. 2540 (1997), the extract of waste contains any heavy metals or toxic substances at the concentration equal to or greater than the respective value as follows:

Arsenic (total)	5.0	milligram per liter
Barium	100.0	milligram per liter
Benzene	0.5	milligram per liter
Cadmium (total)	1.0	milligram per liter
Carbon tetrachloride	0.5	milligram per liter
Chlordane	0.03	milligram per liter
Chlorobenzene	100.0	milligram per liter
Chloroform	6.0	milligram per liter
Chromium (total)	5.0	milligram per liter
ortho-Cresol	200.0	milligram per liter
meta-Cresol	200.0	milligram per liter
para-Cresol	200.0	milligram per liter
Cresol (total)	200.0	milligram per liter
2,4-D	10.0	milligram per liter
1,4-Dichlorobenzene	7.5	milligram per liter
1,2-Dichloroethane	0.5	milligram per liter
1,1-Dicholoethylene	0.7	milligram per liter
Endrin	0.02	milligram per liter
Heptachlor (and its epoxide)	0.008	milligram per liter
Hexachlorobenzene	0.13	milligram per liter
Haxachlorobutadiene	0.5	milligram per liter
Haxachloroethane	3.0	milligram per liter
Lead (total)	5.0	milligram per liter
Lindane	0.4	milligram per liter

Mercury (total)	0.2	milligram per liter
Methoxychlor	10.0	milligram per liter
Methyl ethyl ketone	200.0	milligram per liter
Nitrobenzene	2.0	milligram per liter
2,4-Nitrotoluene	0.13	milligram per liter
Pentrachlorophenol	100.0	milligram per liter
Pyridine	5.0	milligram per liter
Selenium	1.0	milligram per liter
Silver	5.0	milligram per liter
Tetrachloroethylene	0.7	milligram per liter
Toxaphene	0.5	milligram per liter
Trichloroethylene	0.5	milligram per liter
2,4,5-Trichlorophenol	400.0	milligram per liter
2,4,6-Trichlorophenol	2.0	milligram per liter
2,4,5-TP (Silvex)	1.0	milligram per liter
Vinyl chloride	0.2	milligram per liter

Item 2

Hazardous Wastes from Non-specific and Specific Sources

6. Hazardous wastes from non-specific sources:

6.1 The following spent halogenated solvents used in degreasing: Tetrachoroethylene, Tricholroethylene, Methylene chloride, 1,1,1-Trichloroethane, Carbon tetrachloride and Chlorinated fluorocarbon; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more or the above halogenated solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

6.2 The followig spent halogenated solvents: Tetrachoroethylene, Tricholroethylene, Methylene chloride, 1,1,1-Trichloroethane, Chlorobenzene, 1,1,2-Trichloro-1,2,2-Trifluoroethane, Ortho-dichlorobenzene, Trichlorofluoromethane, and 1,1,2-Trichloroethane; all spent solvent mixtures/blends containing,

before use, a total of ten percent or more (by volume) of one or more or the above halogenated solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

6.3 The followig spent non-halogenated solvents group 1: Xylene, Acetone, Ethyl acetate, Ethyl benzene, Ethyl ether, Methyl isobutyl ketone, N-butyl alcohol, Cyclohexanone, and Methanol; all spent solvent mixtures/ blends containing, before use, a total of ten percent or more (by volume) of one or more of the above nonhalogenated solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

6.4 The followig spent non-halogenated solvents group 2: Cresols, Cresylic acid and Nitrobenzene; and the still bottoms from the recovery of these solvents; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more or the above nonhalogenated solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

6.5 The followig spent non-halogenated solvents group 3: Toluene, Methyl ethyl ketone, Carbon disulfide, Isobutanol, Pyridine, Benzene, 2-Ethoxyethanol, and 2-Nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more or the above nonhalogenated solvents; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

6.6 Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/ stripping associated with tin, zinc and aluminum plaling on cabon steel; and (6) chemical etching and milling of aluminum.

6.7 Spent cyanide plating bath solutions from electroplating operations.

6.8 Plating bath residues from the bottom of plating bath from electroplating operations in which cyanides are used in the process.

6.9 Spent stripping and cleaning bath solutions from electroplating operations in which cyanides are used in the process.

6.10 Quenching bath residues from oil bath from metal heat treating operations in which cyanides are used in the process.

6.11 Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.

6.12 Quenching wastewater treatment sludges from metal heat treating operations in which cyanides are used in the process.

6.13 Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.

6.14 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of Tri- or tetrachlorophenol, or of intermediates used to produce the derivatives of Chlorophenol. This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.

6.15 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as reactant, chemical intermediate, or component in a formulating process) of Pentachlorophenol, or of intermediates used to produce its derivatives.

6.16 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as reactant, chemical intermediate, or component in a formulating process) of Tetra-, penta-, or hexachlorobenzenes under alkaline conditions.

6.17 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as reactant, chemical intermediate, or component in a formulating process) of Tri-, and tetrachlorophenols. This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.

6.18 Process wastes including, but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. This listing does not include wastewaters, wastewater treatment sludges and spent catalysts.

6.19 Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one, to and including five, with varying amounts and including five, with varying amounts and positions of chlorine substitution.

6.20 Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as reactant, chemical intermediate, or component in a formulating process) of Tetra-, penta-, or hexachlorobenzenes under alkaline conditions.

6.21 Discarded unused formulations containing Tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol.

6.22 Residues resulting from the incineration or thermal treatment of soil contaminated with hazardous waste, according to 6,14, 6.15, 6.16, 6.17, 6.20 and 6.21.

6.23 Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use, or have previously used, chlorophenolic formulations.

6.24 Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use cresote formulations. This listing does not include bottom sediment sludge from the treatment of wastewater from wood preserving processes that use Creosote and/or Pentachlorophenol.

6.25 Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include bottom sediment sludge from the treatment of wastewater from wood preserving processes that use Creosote and/or Pentachlorophenol.

6.26 Petroleum refinery primary oil/water/solids separation sludge--Any sludge generated from gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units).

6.27 Petroleum refinery secondary (emulsified) oil/water/solids separation sludge --Any sludge and/or float generated from physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges gererated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units).

7. Hazardous waste from specific sources:

7.1 Wood preservation: Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use Creosote and/or Pentachlorophenol.

7.2 Inorganic pigments: Wastewater treatment sludge from the production of Chrome yellow and orange, Molybdate orange, Zinc yellow, Chrome green, Chrome oxide green (anhydrous and hydrated), and Iron blue pigments and Oven residue from the production of chrome oxide green pigments.

7.3 Organic chemicals:

7.3.1 Distillation bottoms from the production of Acetaldehyde from Ethylene.

7.3.2 Distillation side cuts from the production of Acetaldehyde from Ethylene.

7.3.3 Bottom stream from the wastewater strippers in the production of Acrylonitrile.

7.3.4 Bottom stream from the acrylonitrile column in the production of Acrylonitrile.

7.3.5 Bottom from the acrylonitrile purification column in the production of Acrylonitrile.

7.3.6 Still bottoms from the distillation of Benzyl chloride.

7.3.7 Heavy ends or distillation residues from the production of Carbon tetrachloride.

7.3.8 Heavy ends (still bottoms) from the purification column in the production of Epichlorohydrin.

7.3.9 Heavy ends from the fractionation column in Ethyl chloride production.

7.3.10 Heavy ends from the distillation of Ethylene dichloride in Ethylene dichloride production.

7.3.11 Heavy ends from the distillation of Vinyl chloride in Vinyl chloride monomer production.

7.3.12 Aqueous spent Antimony catalyst waste from Fluoromethane production.

7.3.13 Distillation bottom tars from the production of Phenol/Acetone from Cumene.

7.3.14 Distillation light ends from the production of Phthalic anhydride from Naphthalene.

7.3.15 Distillation bottoms from the production of Phthalic anhydride from Naphthalene.

7.3.16 Distillation bottoms from the production of Nitrobenzene from the nitration of Benzene.

7.3.17 Stripping still tails from the production of Methyl ethyl pyridine.

7.3.18 Centrifugation and distillation residues from Toluene diisocyanate production.

7.3.19 Spent catalyst from hydrochlorinator reactor in the production of 1,1,1-Trichloroethane.

7.3.20 Waste from the product stream stripper in the production of 1,1,1-Trichloroethane.

7.3.21 Column bottoms or heavy ends from the combined production of Trichloroethylene and Perchloroethylene.

7.3.22 Distillation bottoms from Aniline production.

7.3.23 Distillation or fractionation column bottoms from the production of Chlorobenzene.

7.3.24 Distillation light ends from the production of Phthalic anhydride from Ortho-xylene.

7.3.25 Distillation bottoms from the production of Phthalic anhydride from Ortho-xylene.

7.3.26 Distillation bottoms from the production of 1,1,1-Trichloroethane.

7.3.27 Heavy ends from heavy ends column from the production of 1,1,1-Trichloroethane.

7.3.28 Process residues from Aniline extraction from the production of Aniline.

7.3.29 Combined wastewaters generated from Nitrobenzene/Aniline production.

7.3.30 Separated aqueous stream from the reactor product washing step in the production of Chlorobenzene.

7.3.31 Column bottoms from product separation from the production of 1,1-Dimethylhydrazine (UDMH) from Carboxylic acid hydrazine.

7.3.32 Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-Dimethylhydrazine (UDMH) from Carboxylic acid hydrazine.

7.3.33 Spent filter cartridges from product purification from the product of 1,1-Dimethylhydrazine from Carboxylic acid hydrazine.

7.3.34 Condensed column overheads from intermediate separation from the production of 1,1-Dimethylhydrazine from Carboxylic acid hydrazine.

7.3.35 Product washwaters from the production of Dinitrotoluene via nitration of Toluene.

7.3.36 Reaction by-product water from the drying column in the production of Toluenediamine via hydrogenation of Dinitrotoluene.

7.3.37 Condensed liquid light ends from purification of Toluenediamine in production of Toluenediamine via hydrogenation of Dinitrotoluene.

7.3.38 Vicinals from purification of Toluenediamine in production of Toluenediamine via hydrogenation of Dinitrotoluene.

7.3.39 Heavy ends from purification of Toluenediamine in the production of Toluenediamine via hydrogenation of Dinitrotoluene.

7.3.40 Organic condensate from solvent recovery column in the production of Toluene diisocyanate via phosgenation of Toluenediamine.

7.3.41 Wastewater from the reactor vent gas scrubber in the production of Ethylene dibromide via bromination of Ethene.

7.3.42 Spent absorbent solids from purification of Ethylene dibromide in the production of Ethylene dibromide via bromination of Ethene.

7.3.43 Still bottoms from the purification of Ethylene dibromide in the production of Ethylene dibromide via bromination of Ethene.

7.3.44 Distillation bottoms from the production of Alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, Benzoyl chlorides, and compounds with mixtures of these functional groups. This waste does not include still bottoms from the distillation of benzoyl chloride.

7.3.45 Organic residuals excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of Alpha- (or methyl-) chlorinated toluenes, ring-chtorinated toluenens, Benzoyl chlorides, and compounds with mixtures of these functional groups.

7.3.46 Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of Alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, Benzoyl chlorides, and compounds with mixtures of these functional groups.

7.4 Inorganic chemicals:

7.4.1 Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.

7.4.2 Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.

7.4.3 Wastewater treatment sludge from the mercury cell process in chlorine production.

7.5 Pesticides:

7.5.1 By-product salts generated in the production of MSMA and Cacodylic acid.

7.5.2 Wastewater treatment sludge from the production of Chlordane.

7.5.3 Wastewater and scrub water from chlorination of Cyclopentadiene in the production of Chlordane.

7.5.4 Filter solids from the filtration of Hexachlorocyclopentadiene in the production of Chlordane.

7.5.5 Wastewater treatment sludges generated in the production of Creosote.

7.5.6 Still bottoms from Toluene reclamation distillation in the production of Disulfoton.

7.5.7 Wastewater treatment sludges from the production of Disulfoton.

7.5.8 Wastewater from the washing and stripping of Phorate production.

7.5.9 Filter cake from the filtration of Diethylphosphorodithioic acid in the production of Phorate.

7.5.10 Wastewater treatment sludge from the production of Phorate.

7.5.11 Wastewater treatment sludge from the production of Toxaphene.

7.5.12 Heavy ends or distillation residues from distillation of Tetrachlorobenzene in the production of 2,4,5-T.

7.5.13 2,6-Dichlorophenol waste from the production of 2,4-D.

7.5.14 Vacuum stripper discharge from the chlordane chlorinator in the production of Chlordane.

7.5.15 Untreated process wastewater from the production of Toxaphene.

7.5.16 Untreated wastewater from the production of 2,4-D.

7.5.17 Process wastewater (including supernates, filtrates, and washwaters) from the production of Ethylenebisdithiocarbamic acid and its salts.

7.5.18 Reactor vent scrubber water from the production of Ethylenebisdithiocarbamic acid and its salts.

7.5.19 Filtration, evaporation and centrifugation solids from the production of Ethylenebisdithiocarbamic acid and its salts.

7.5.20 Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of Ethylenebisdithiocarbamic acid and its salts.

7.5.21 Wastewater from the reactor and spent sulfuric acid from the acid dyer from the production of Methyl bromide.

7.5.22 Spent absorbent and wastewater separator solids from the production of Methyl bromide.

7.6 Explosives: Wastewater treatment sludges from the manufacturing and processing of explosives, Spent carbon from the treatment of wastewater containing explosives, Wastewater treatment sludges from the manufacturing, formulation, and loading of lead-based initiating compounds, and Pink/red water from TNT operations.

7.7 Petroleum refining: Dissolved air flotation (DAF) float, slop oil emulsion solids, tank bottoms (leaded), API separator sludge, and heat exchanger bundle cleaning sludge from the petroleum refining industry.

7.8 Iron and steel: Emission control dust/sludge from the primary production of steel in electric furnaces and spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry.

7.9 Primary copper: Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production.

7.10 Primary lead: Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.

7.11 Primary zinc: Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.

7.12 Primary aluminum: Spent potliners from primary aluminum reduction.

7.13 Secondary lead: Emission control dust/sludge fron secondary lead smelting and waste leaching solution from acid leaching of emission control dust/studge from secondary lead smelting.

7.14 Veterinary pharmaceuticals: Wastewater treatment sludge, distillation tar residues from the distillation of Aniline-based compounds and residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from Arsenic or Organo-arsenic compounds

7.15 Ink formulation: Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.

7.16 Coking:

7.16.1 Ammonia still lime sludge from coking operations.

7.16.2 Decanter tank tar sludge from coking operations.

7.16.3 Process residues from the recovery of coal tar, including, but not limited to, tar collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal.

7.16.4 Tank storage residues from the production of coke from coal or from the recovery of coke by-products produced from coal.

7.16.5 Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.

7.16.6 Wastewater sump residues from light oil refining, including, but not limited to, interception or contamination sump sludges from the recovery of coke by-products produced from coal.

7.16.7 Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.

7.16.8 Tar storage tank residues from coal tar refining.

7.16.9 Residues from coal tar distillation, including, but not limited to, still bottoms.

7.17 Petrochemical industry: Residues of plastic or plastic product contaminated with any solvents, Plastics or plastic residues from uncompleted polymerization, Wastewater treatment sludges contaminated with any solvents, and Residual or spent catalyts and intermediates

Item 3

Hazardous Wastes: Discarded Commercial Chemical Products,Off-specification Species, Container Residues, and Spill Residues

8. Acute hazardous chemicals:

8.1 Acetaldehyde, chloro-
8.2 Acetamide, N-(aminothiomethyl)-
8.3 Acetamide, 2-fluoro-
8.4 Acetic acid, fluoro-, sodium salt
8.5 1-Acetyl-2-thiourea
8.6 Acrolein
8.7 Aldicarb
8.8 Aldrin
8.9 Allyl alcohol
8.10 Aluminium phosphide
8.11 5-(Aminomethyl)-3-isoxazolol
8.12 4-Aminopyridine
8.13 Ammonium picrate
8.14 Ammonium vanadate
8.15 Argentate(1-), bis(cyano-C)-, potassium
8.16 Arsenic acid H_3AsO_4
8.17 Arsenic oxide As_2O_3
8.18 Arsenic oxide As_2O_5
8.19 Arsenic pentoxide
8.20 Arsenic trioxide
8.21 Arsine, diethyl-
8.22 Arsonous dechloride, phenyl-
8.23 Aziridine
8.24 Aziridine, 2-methyl-

8.25 Barium cyanide
8.26 Benzenamine, 4-chloro-
8.27 Benzenamine, 4-nitro-
8.28 Benzene, (chloromethyl)-
8.29 1,2-Benzenadiol,4-[1-hydroxy-2-(methylamino)ethyl]-
8.30 Benzeneethanamine, alpha, alpha-dimethyl-
8.31 Benzenethiol
8.32 2H-1-Benzopyran-2-one,4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations greather than 0.3%
8.33 Benzyl chloride

8.34 Beryllium powder
8.35 Bromoacetone
8.36 Brucine
8.37 2-Butanone, 3, 3-dimethyl-1-(methylthio)-,o-(methylamino)carbonyl] oxime
8.38 Calcium cyanide
8.39 Calcium cyanide $Ca(CN)_2$
8.40 Carbon disulfide
8.41 Carbonic dichloride
8.42 Chloroacetaldehyde
8.43 p-Chloroaniline
8.44 1-(o-Chlorophenyl)thiourea
8.45 3-Chloropropionitrile
8.46 Copper cyanide
8.47 Copper cyanide Cu(CN)
8.48 Cyanides (soluble cyanide salts)
8.49 Cyanogen
8.50 Cyanogen chloride
8.51 Cyanogen chloride (CN)Cl
8.52 2-Cyclohexyl-4,6-dinitrophenol
8.53 Dichloromethyl ether
8.54 Dichlorophenylarsine
8.55 Dieldrin
8.56 Diethylarsine
8.57 Diethyl-p-nitrophenyl phosphate
8.58 O,O-Diethyl O-pyrazinyl phosphorothioate
8.59 Diisopropylfluorophosphate (DFP)
8.60 1, 4, 5, 8-Dimethanonaphthalene, 1, 2, 3, 4, 10, 10-hexa-chloro-1, 4, 4a, 5, 8, 8a, -hexahydro-, (1alpha, 4alpha, 4abeta, 5alpha, 8alpha, 8abeta)-
8.61 1, 4, 5, 8-Dimethanonaphthalene, 1, 2, 3, 4, 10, 10-hexa-chloro-1, 4, 4a, 5, 8, 8a, -hexahydro-, (1alpha, 4alpha, 4abeta, 5beta, 8beta, 8abeta)-
8.62 2, 7:3, 6-Dimethanonaphth[2,3-b]oxirene, 3, 4, 5, 6, 9, 9-hexachloro-1a, 2, 2a, 3, 6, 6a, 7, 7a-octahydro-,(1aalpha, 2beta, 2aalpha, 3beta, 6beta, 6aalpha, 7beta, 7aalpha)-
8.63 2, 7:3, 6-Dimethanonaphth[2,3-b]oxirene, 3, 4, 5, 6, 9, 9-hexachloro-1a, 2, 2a, 3, 6, 6a, 7, 7a-octahydro-,(1aalpha, 2beta, 2abeta, 3alpha, 6alpha, 6abeta, 7beta, 7aalpha)-, & metabolites-
8.64 Dimethoate
8.65 alpha, alpha-Dimethylphenethylamine
8.66 4,6-Dinitro-o-cresol, & salts
8.67 2, 4-Dinitrophenol

8.68 Dinoseb
8.69 Diphosphoramide, octamethyl-
8.70 Diphosphoric acid, tetraethyl ester
8.71 Disulfoton
8.72 Dithiobiuret

8.73 Endosulfan
8.74 Endothall
8.75 Endrin
8.76 Endrin, & metabolites
8.77 Epinephrine
8.78 Ethanedinitrile
8.79 Ethanimidothioic acid, N-[[mithylamino)carbonyl]oxy]-,methyl ester
8.80 Ethyl cyanide
8.81 Ethyleneimine
8.82 Famphur
8.83 Fluorine
8.84 Fluoroacetamide
8.85 Fluoroacetic acid, sodium salt
8.86 Fulminic acid, mercury (2+) salt
8.87 Heptachlor
8.88 Hexaethyl tetraphosphate
8.89 Hydrazinecarbothioamide
8.90 Hydrazine, methyl -
8.91 Hydrocyanic acid
8.92 Hydrogen cyanide
8.93 Hydrogen phosphide
8.94 Isodrin
8.95 3(2H)-Isoxazolone, 5-(aminomethyl)-
8.96 Mercury,(acetato-O)phenyl-
8.97 Mercury fulminate
8.98 Methanamine, N-methyl-N-nitroso-
8.99 Methane, isocyanato-
8.100 Methane, oxybis[chloro-
8.101 Methane, tetranitro-
8.102 Methanethiol, trichloro-
8.103 6, 9-Methano-2, 4, 3-benzodioxathiepin, 6, 7, 8, 9, 10, 10-hexachloro-1, 5, 5a, 6, 9, 9a-hexahydro-, 3-oxide
8.104 4, 7-Methano-1H-indene, 1, 4, 5, 6, 7, 8, 8-heptachloro-3a. 4, 7, 7a-tetrahydro-
8.105 Methomyl
8.106 Methyl hydrazine
8.107 Methyl isocyanate
8.108 2-Methyllactonitrile
8.109 Methyl parathion
8.110 alpha-Naphthylthiourea
8.111 Nickel carbonyl
8.112 Nickel carbonyl $Ni(CO)_4$
8.113 Nickel cyanide
8.114 Nickel cyanide $Ni(CN)_2$

8.115 Nicotine, & salts
8.116 Nitric oxide

8.117 p-Nitroaniline
8.118 Nitrogen dioxide
8.119 Nitrogen oxide NO
8.120 Nitrogen oxide NO2
8.121 Nitroglycerine
8.122 N-Nitrosodimethylamine
8.123 N-Nitrosomethylamine
8.124 Octamethylpyrophosphoramide
8.125 Osmium oxide OsO_4
8.126 Osmium tetroxide
8.127 7-Oxabicyclo[2.2.1]heptane-2, 3-dicarboxylic acid
8.128 Parathion
8.129 Phenol, 2-cyclohexyl-4, 6-dinitro-
8.130 Phenol, 2, 4-dinitro-
8.131 Phenol, 2-methyl-4, 6-dinitro-, & salts
8.132 Phenol, 2-(1-methylpropyl)-4, 6-dinitro-
8.133 Phenol, 2, 4, 6-trinitro-, ammonium salt
8.134 Phenylmercury acetate
8.135 Phenylthiourea
8.136 Phorate
8.137 Phosgene
8.138 Phophine
8.139 Phosphoric acid, diethyl 4-nitrophenyl ester
8.140 Phosphorodithioic acid, O, O-diethyl S-[(ethylthio)ethyl] ester
8.141 Phosphorodithioic acid, O, O-diethyl S-[(ethylthio)methyl] ester
8.142 Phosphorodithioic acid, O, O-diethyl S-[2-(methylamino)-oxoethyl] ester
8.143 Phosphorofluoridic acid, bis(1-methylethyl) ester
8.144 Phosphorothioic acid, O, O-diethyl O-(4-nitrophenyl) ester
8.145 Phosphorothioic acid, O, O-diethyl O-pyrazinyl ester
8.146 Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O, O-dimethyl ester
8.147 Phosphorothioic acid, O, O-dimethyl O-(4-nitrophenyl) ester
8.148 Plumbane,tetraethyl-
8.149 Potassium cyanide
8.150 Potassium cyanide K(CN)
8.151 Potassium silver cyanide
8.152 Propanal, 2-methyl-2(methulthio)-, O[(methylamino)carbonyl]oxime
8.153 Propanenitrile
8.154 Propanenitrile, 3-chloro-
8.155 Propanenitrile, 2-hydroxyl-2methyl-
8.156 1, 2, 3-Propanone,1-bromo-
8.157 2-Propanone,1-bromo-
8.158 Propargyl alcohol
8.159 2-Propenal
8.160 2-Propen-1-ol
8.161 1, 2-Propylenimine

8.162 2-Propyn-1-ol
8.163 4-Pyridinamine
8.164 Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
8.165 Selenious acid, dithallium (1+) salt
8.166 Selenourea
8.167 Silver cyanide
8.168 Silver cyanide Ag(CN)
8.169 Sodium azide
8.170 Sodium cyanide
8.171 Sodium cyanide Na(CN)
8.172 Strychnidin-10-one, & salts
8.173 Strychnidin-10-one, 2, 3-dimethoxy-
8.174 Strychnine, & salts
8.175 Sulfuric acid, dithallium (1+) salt
8.176 Tetraethyldithiopyrophosphate
8.177 Tetraethyl lead
8.178 Tetraethyl pyrophosphate
8.179 Tetranitromethane
8.180 Tetraphosphoric acid, hexaethyl ester
8.181 Thallic oxide
8.182 Thallium oxide Tl_2O_3
8.183 Thallium selenite
8.184 Thallium sulfate
8.185 Thiodiphosphoric acid, tetraethyl ester
8.186 Thiofanox
8.187 Thioimidodicarbonic diamide $[H_2N)C(S)]_2NH$
8.188 Thiophenol
8.189 Thiosemicarbazide
8.190 Thiourea, (2-chlorophenyl)-
8.191 Thiourea, 1-naphthalenyl-
8.192 Thiourea, phenyl-
8.193 Toxaphene
8.194 Trichloromethanethiol
8.195 Vanadic acid, ammonium salt
8.196 Vanadium oxide V_2O_5
8.197 Vanadium pentoxide
8.198 Vinylamine, N-methyl-N-nitroso-
8.199 Warfarin, & salts, when present at concentrations greater than 0.3%
8.200 Zinc cyanide
8.201 Zinc cyanide $Zn(CN)_2$
8.202 Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%

9. Toxic hazardous chemicals:

9.1 Acetaldehyde
9.2 Acetaldehyde, trichloro-

9.3 Acetamide, N-(4-ethoxyphenyl)-
9.4 Acetamide, N-9-fluoren-2-yl

9.5 Acetic acid, (2, 4-dichlorophenoxy)-, salts & esters
9.6 Acetic acid ethyl ester
9.7 Acetic acid, lead (2+) salt
9.8 Acetic acid, thallium (1+) salt
9.9 Acetic acid, (2, 4, 5-trichlorophenoxy)-,
9.10 Acetone
9.11 Acetonitrile
9.12 Acetophenone
9.13 2-Acetylaminofluorene
9.14 Acetyl chloride
9.15 Acrylamide
9.16 Acrylic acid
9.17 Acrylonitrile
9.18 Amitrole
9.19 Aniline
9.20 Arsenic acid,dimethyl-
9.21 Auramine
9.22 Azaserine
9.23 Azirino[2', 3':3, 4]pyrrolo[1, 2-a]indole-4, 7-dione, 6-amino-8[[(aminocarbonyl)oxy] methyl]-1, 1a, 2, 8, 8a, 8b-hexahydro-8a-methoxy-5-methyl-,[1aS-(1aalpha, 8beta, 8aalpha, 8balpha)]-
9.24 Benz[j]aceanthrylene, 1, 2-dihydro-3-methyl-
9.25 Benz[c]acridine
9.26 Benzal chloride
9.27 Benzamide, 3, 5-dichloro-N-(1,1-dimethyl-2-propynyl)-
9.28 Benz[a]anthracene
9.29 Benz[a]anthracene, 7, 12-dimethyl-
9.30 Benzenamine
9.31 Benzenamine, 4, 4'-carbonimidoylbis[N,N-dimethyl-
9.32 Benzenamine, 4-chloro-2-methyl-,hydrochloride
9.33 Benzenamine, N,N-dimethyl-4-(phenylazo)-
9.34 Benzenamine, 2-methyl-
9.35 Benzenamine, 4-methyl-
9.36 Benzenamine, 4, 4'-methylenebis[2-chloro-
9.37 Benzenamine, 2-methyl-5-nitro-
9.38 Benzene
9.39 Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
9.40 Benzene, 1-bromo-4-phenoxy-
9.41 Benzenebutanoic acid, 4-[bis(2-chloroethyl) ester
9.42 Benzene, chloro-
9.43 Benzenediamine, ar-methyl-
9.44 1, 2-Benezenedicarboxylic acid, bis(2-ethylhexyl) ester
9.45 1, 2-Benezenedicarboxylic acid, dibutyl ester
9.46 1, 2-Benezenedicarboxylic acid, diethyl ester
9.47 1, 2-Benezenedicarboxylic acid, dimethyl ester
9.48 1, 2-Benezenedicarboxylic acid, dioctyl ester
9.49 Benzene, 1, 2-dichloro-
9.50 Benzene, 1, 3-dichloro-

9.51 Benzene, 1, 4-dichloro-
9.52 Benzene, 1, 1'-(2, 2-dichloroethylidene)bis[4-chloro-
9.53 Benzene, (dichloromethyl)-
9.54 Benzene, 1, 3-diisocyanatomethyl-
9.55 Benzene, dimethyl-
9.56 1,3-benzenediol
9.57 Benzene, hexachloro-
9.58 Benzene, hexahydro-
9.59 Benzene, methyl-
9.60 Benzene, 1-methyl-2, 4-dinitro-
9.61 Benzene, 2-methyl-1, 3-dinitro-
9.62 Benzene, (1-methylethyl)-
9.63 Benzene, nitro-
9.64 Benzene, pentachloro-
9.65 Benzene, pentachloronitro-
9.66 Benzenesulfonic acid chloride
9.67 Benzenesulfonyl chloride
9.68 Benzene, 1, 2, 4, 5-tetrachloro-
9.69 Benzene, 1, 1'-(2, 2, 2-trichloroethylidene)bis[4-chloro-
9.70 Benzene, 1, 1'-(2, 2, 2-trichloroethylidene)bis[4-methoxy-
9.71 Benzene, (trichloromethyl)-
9.72 Benzene, 1, 3, 5-trinitro-
9.73 Benzidine
9.74 1, 2-Benzisothiazol-3(2H)-one, 1, 1-dioxide, & salts
9.75 1, 3-Benzodioxole, 5-(2-propenyl)-
9.76 1, 3-Benzodioxole, 5-(1-propenyl)-
9.77 1, 3-Benzodioxole, 5-propyl-
9.78 Benzo(rst)pentaphene
9.79 2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, whent present at concentrations of 3% or less
9.80 Benzo(a)pyrene
9.81 p-Benzoquinone
9.82 Benzotrichloride
9.83 2,2'-Bioxirane
9.84 [1, 1'-Biphenyl]-4, 4'-diamine
9.85 [1, 1'-Biphenyl]-4, 4'-diamine, 3, 3'-dichloride-
9.86 [1, 1'-Biphenyl]-4, 4'-diamine, 3, 3'-dimethoxy-
9.87 [1, 1'-Biphenyl]-4, 4'-diamine, 3,3'-dimethyl-
9.88 Bromoform
9.89 4-Bromophenyl phenyl ether
9.90 1,3-Butadiene, N-butyl-N-nitroso-

9.91 1-Butanol
9.92 2-Butanone
9.93 2-Butanone, peroxide
9.94 2-Butenal
9.95 2-Butene, 1, 4-dichloro-

9.96 2-Butenoic acid, 2-methyl-, 7-[[2, 3-dihydroxy-2-(1-methoxyethyl)-3-methyl-1-oxobutoxy]methyl-2, 3, 5, 7a-tetrahydro-1H-pyrrolizin-1-yl ester, [1S-[1alpha(Z), 7(2S*, 3R*),7aalpha]]-
9.97 n-Butyl alcohol
9.98 Cacodylic acid
9.99 Calcium chromate
9.100 Carbamic acid, ethyl ester
9.101 Carbamic acid, methylnitroso-, ethyl ester
9.102 Carbamic chloride, dimethyl-
9.103 Carbamodithioic acid, 1,2-ethanediyibis-, salts & esters
9.104 Carbamodithioic acid, bis(1-methylethyl-)-, S-(2, 3-dichloro-2-propenyl) ester
9.105 Carbonic acid, dithallium (1+) salt.
9.106 Carbonic difluoride
9.107 Carbonochloridic acid, methyl ester
9.108 Carbon tetrachloride
9.109 Chloral
9.110 Chlorambucil
9.111 Chlordane, alpha and gamma isomers
9.112 Chlornaphazin
9.113 Chlorobenzene
9.114 Chlorobenzilate
9.115 p-Chloro-m-cresol
9.116 2-Chloroethyl vinyl ether
9.117 Chloroform
9.118 Chloromethyl methyl ether
9.119 beta-Chloronaphthalene
9.120 o-Chlorophenol
9.121 4-Chloro-o-toluidine, hydrochloride
9.122 Chromic acid H_2CrO_4, calcium salt
9.123 Chrysene
9.124 Creosote
9.125 Cresol (Cresylic acid)
9.126 Crotonaldehyde
9.127 Cumene
9.128 Cyanogen bromide (CN)Br
9.129 2, 5-Cyclohexadiene-1, 4-dione
9.130 Cyclohexane
9.131 Cyclohexane, 1, 2, 3, 4, 5, 6-hexachloro-,(1alpha, 2alpha, 3beta, 4alpha, 5alpha, 6beta)-
9.132 Cyclohexanone

9.133 1, 3-Cyclopentadiene, 1, 2, 3, 4, 5, 5-hexachloro-
9.134 Cyclophosphamide
9.135 2, 4-D, salts & esters
9.136 Daunomycin
9.137 DDD
9.138 DDT
9.139 Diallate
9.140 Dibenz[a, h]anthracene
9.141 Dibenzo[a, i]pyrene

9.142 1, 2-Dibromo-3-chloropropane
9.143 Dibutyl phthalate
9.144 o-Dichlorobenzene
9.145 m-Dichlorobenzene
9.146 p-Dichlorobenzene
9.147 3, 3'-Dichlorobenzidine
9.148 1, 4-Dichloro-2-butene
9.149 Dichlorodifluoromethane
9.150 1, 1-Dichloroethylene
9.151 1, 2- Dichloroethylene
9.152 Dichloroethyl ether
9.153 Dichloroisopropyl ether
9.154 Dichloromethoxyl ethane
9.155 2, 4-Dichlorophenol
9.156 2, 6-Dichlorophenol
9.157 1, 3- Dichloropropane
9.158 1, 2:3, 4-Dipoxybutane
9.159 1, 4-Diethyleneoxide
9.160 Diethylhexy phthalate
9.161 N, N'-Diethylhydrazine
9.162 O, O'-Diethyl S-methyl dithiophosphate
9.163 Diethyl phthalate
9.164 Diethylstillbesterol
9.165 Dihydrosafrole
9.166 3, 3'-dimethoxybenzidine
9.167 Dimethylamine
9.168 p-Dimethylaminoazobenzene
9.169 7, 12-Dimethylbenz[a]anthracene
9.170 3, 3'-Dimethylbenzidine
9.171 alpha, alpha-Dimethylbenzylhydroperoxide
9.172 Dimethylcarbamoyl chloride
9.173 1, 1-Dimethylhydrazine
9.174 1, 2-Dimethylhydrazine
9.175 2, 4-Dimethylphenol
9.176 Dimethyl phthalate
9.177 Dimethyl sulfate
9.178 2, 4-Dinitrotoluene
9.179 2, 6-Dinitrotoluene
9.180 Di-n-octyl phthalate
9.181 1, 4-Dioxane
9.182 1, 2-Diphenylhydrazine
9.183 Dipropylamine
9.184 Di-n-propylnitrosamine
9.185 Epichlorohydrin
9.186 Ethanal
9.187 Ethanamine, N-ethyl-N-nitroso-
9.188 1, 2-Ethanediamine, N, N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
9.189 Ethane, 1, 2-dibromo-
9.190 Ethane, 1, 1-dichloro-

9.191 Ethane, 1, 2-dichloro-
9.192 Ethane, hexachloro-
9.193 Ethane, 1, 1'-[methylenebis(oxy)bis[2-dichloro-
9.194 Ethane, 1, 1'-oxybis-
9.195 Ethane, 1, 1'-oxybis[2-dichloro-
9.196 Ethane, pentachloro-
9.197 Ethane, 1, 1, 1, 2-tetrachloro-
9.198 Ethane, 1, 1, 2, 2-tetrachloro-
9.199 Ethanethioamide
9.200 Ethane, 1, 1, 1-tetrachloro-
9.201 Ethane, 1, 1, 2-tetrachloro-
9.202 Ethanol, 2-ethoxy-
9.203 Ethanol, 2, 2'-(nitrosoimino)bis-
9.204 Ethanone, 1-phenyl-
9.205 Ethene, chloro-
9.206 Ethene, (2-chloroethoxy)-
9.207 Ethene, 1, 1-dichloro-
9.208 Ethene, 1, 2-dichloro-, (E),
9.209 Ethene, tetrachloro-
9.210 Ethene, trichloro-
9.211 Ethyl acetate
9.212 Ethyl acrylate
9.213 Ethyl carbamate (urethane)
9.214 Ethyl ether
9.215 Ethylenebisdithiocarbamic acid, salts & esters
9.216 Ethylene dibromide
9.217 Ethylene dichloride
9.218 Ethylene glycol monoethyl ether
9.219 Ethylene oxide
9.220 Ethylenethiourea
9.221 Ethylidene dichloride
9.222 Ethyl methacrylate
9.223 Ethyl methanesulfonate
9.224 Fluoranthene
9.225 Formaldehyde
9.226 Formic acid
9.227 Furan
9.228 2-Furancarboxyaldehyde
9.229 2, 5-Furandione
9.230 Furan, tetrahydro-
9.231 Furfural
9.232 Furfuran
9.233 Glucopyrose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
9.234 D-Glucose, 2-deoxy-2-[[(methylnitrosoamino)-carbonyl]amino]-
9.235 Glycidyaldehyde
9.236 Guanidine, N-methyl-N'-nitro-N'-nitroso-
9.237 Hexachlorobenzene
9.238 Hexachlorobutadiene
9.239 Hexachlorocyclopentadiene

9.240 Hexachloroethane
9.241 Hexachlorophene
9.242 Hexachloropropene
9.243 Hydrazine
9.244 Hydrazine, 1, 2-diethyl-
9.245 Hydrazine, 1, 1-dimethyl-
9.246 Hydrazine, 1, 2-dimethyl-
9.247 Hydrazine, 1, 2-diphenyl-
9.248 Hydrofluoric acid
9.249 Hydrogen fluoride
9.250 Hydrogen sulfide
9.251 Hydrogen sulfide H_2S
9.252 Hydroperoxy, 1-methyl-1-phenylethyl-
9.253 2-Imdazolidinethione
9.254 Indeno[1, 2, 3-cd]pyrene
9.255 1, 3-Isobenzofurandione
9.256 Isobutyl alcohol
9.257 Isosafrole
9.258 Kepone
9.259 Lasiocarpine
9.260 Lead acetate
9.261 Lead, bis(acetato-O)tetrahydroxytri-
9.262 Lead phosphate
9.263 Lead subacetate
9.264 Lindane
9.265 MNNG
9.266 Maleic anhydride
9.267 Maleic hydrazine
9.268 Malononitrile
9.269 Melphalan
9.270 Mercury
9.271 Methacrylonitrile
9.272 Methanamine, N-methyl-
9.273 Methane, bromo-
9.274 Methane, chloro-
9.275 Methane, chloromethoxy-
9.276 Methane, dibromo-
9.277 Methane, dichloro-
9.278 Methane, dichlorofluoro-
9.279 Methane, iodo-
9.280 Methanesulfonic acid, ethyl ester
9.281 Methane, tetrachlor-
9.282 Methanethiol
9.283 Methane, tribromo-
9.284 Methane, trichloro-
9.285 Methane, trichlorofluoro-
9.286 4, 7-Methano-1H-indene, 1, 2, 4, 5, 6, 7, 8, 8-octachloro-2, 3, 3a, 4, 7, 7a-hexahydro-
9.287 Methanol
9.288 Methapyrilene

9.289 1, 3, 4-Methano-2H-cyclobuta[cd]pentalen-2-one, 1, 1a, 3, 3a, 4, 5, 5a, 5b, 6-decachlrooctahydro-
9.290 Methoxychlor
9.291 Methyl alcohol
9.292 Methyl bromide
9.293 1-Methylbutadiene
9.294 Methyl chloride
9.295 Methylchlorocarbonate
9.296 Methyl chloroform
9.297 3-Methylcholanthrene
9.298 4,4'-Methylenebis(2-chloroaniline)
9.299 Methylene bromide
9.300 Methylene chloride
9.301 Methyl ethyl ketone (MEK)
9.302 Mehtyl ethyl ketone peroxide
9.303 Methyl iodide
9.304 Methyl isobutyl ketone
9.305 Methly methacrylate
9.306 4-Methyl-2-pentanone
9.307 Methylthiouracil
9.308 Mitomycin C
9.309 5, 12-Naphthacenedione, 8-acetyl-10-[(3-amino-2, 3, 6-trideoxy)-alpha-L-lyxo-hexopyranosy)oxy]-7, 8, 9, 10-tetrahydro-6, 8, 11-trihydroxy-1-methoxy-,(8S-cis)-
9.310 1-Naphthalenamine
9.311 2-Naphthalenamine
9.312 Naphthalenamine, N, N'-bis(2-chloroethy3)-
9.313 Naphthalene

9.314 Naphthalene, 2-chloro-
9.315 1, 4-Naphthalenedione
9.316 2, 7-Naphthalenedisulfonic acid, 3, 3'-[3, 3'-dimethyl[1, 1'-biphenyl]-4-4'-diyl)bis[5-amino-4-hydroxy]-, tetrasodium salt
9.317 1, 4-Naphthaquinone
9.318 alpha-Naphthylamine
9.319 beta-Naphthylamine
9.320 Nitric acid, dithallium (1+) salt
9.321 Nitrobenzene
9.322 p-Nitrophenol
9.323 2-Nitropropane
9.324 N-Nitrosodi-n-butylamine
9.325 N-Nitrosodiethanolamine
9.326 N-Nitrosodiethylamine
9.327 N-Nitroso-N-ethylurea
9.328 N-Nitroso-N-methylurea
9.329 N-Nitroso-N-methylurethane
9.330 N-Nitrosopiperidine
9.331 N-Nitrosopyrrolidine
9.332 5- Nitro-o-toluidine
9.333 1, 2-Oxathiolane, 2, 2-dioxide

9.334 2H-1, 3, 2-Oxazaphosphorin-2-amine N, N-bis(2-chloroethyl)tetrahydro-, 2-oxide
9.335 Oxirane
9.336 Oxiranecarboxyaldehyde
9.337 Oxirane, (chloromethyl)-
9.338 Paraldehyde
9.339 Pentachlorobenzene
9.340 Pentachloroethane
9.341 Pentachloronitrobenzene (PCNB)
9.342 Pentachlorophenol
9.343 Pentanol, 4-methyl-
9.344 1, 3-Pentadiene
9.345 Phenacetin
9.346 Phenol
9.347 Phenol, 2-chloro-
9.348 Phenol, 4-chloro-3-methyl-
9.349 Phenol, 2, 4-dichloro-
9.350 Phenol, 2, 6-dichloro-
9.351 Phenol, 4, 4'-(1, 2-diethyl-1, 2-ethenediyl)bis-, (E)-
9.352 Phenol, 2, 4-dimethyl-
9.353 Phenol, methyl-
9.354 Phenol, 2, 2'-methylenebis[3, 4, 6-trichloro-
9.355 Phenol, 4-nitro-
9.356 Phenol, pentachloro-
9.357 Phenol, 2, 3, 4, 6-tetrachloro-

9.358 Phenol, 2, 4, 5-trichloro-
9.359 Phenol, 2, 4, 6-trichloro-
9.360 L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
9.361 Phosphoric acid, lead (2+) salt (2:3)
9.362 Phospholodithioic acid, O, O-diethyl S-methyl ester
9.363 Phosphorus sulfide
9.364 Phthalic anhydride
9.365 2-Picoline
9.366 Piperidine, 1-nitroso-
9.367 Pronamide
9.368 1-Propanamine
9.369 1-Propanamine, N-nitroso-N-propyl-
9.370 1-Propanamine, N-propyl-
9.371 Propane, 1, 2-dibromo-3-chloro-
9.372 Propane, 1, 2-dichloro-
9.373 Propanedinitrile
9.374 Propane, 2-nitro-
9.375 Propane, 2, 2'-oxybis[2-chloro-
9.376 1,3-Propane sultone
9.377 Propanoic acid, 2-(2, 4, 5-trichlorophenoxy)-
9.378 1-Propanol, 2, 3-dibromo-, phosphate (3:1)
9.379 1-Propanol, 2-methyl-
9.380 2-Propanone
9.381 2-Propenamide

9.382 1-Propene, 1, 3-dichloro-
9.383 1-Propene, 1, 1, 2, 3, 3-hexachloro-
9.384 2-Propenenitrile
9.385 2-Propenenitrile, 2-methyl-
9.386 2-Propenoic acid
9.387 2-Propenoic acid, ethyl ester
9.388 2-Propenoic acid, 2-methyl-, ethyl ester
9.389 2-Propenoic acid, 2-methyl-, methyl ester
9.390 n-Propylamine
9.391 Propylene dichloride
9.392 3, 6-Pyridazinedione, 1, 2-dihydro-
9.393 Pyridine
9.394 Pyridine, 2-methyl-
9.395 2, 4-(1H, 3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-
9.396 4(1H)-Pyrimidione, 2, 3-dihydro-6-methyl-2-thioxo-
9.397 Pyrrolidine, 1-nitroso-
9.398 Reserpine
9.399 Resorcinol
9.400 Saccharin, & salts
9.401 Safrole
9.402 Selenious acid
9.403 Selenium dioxide

9.404 Selenium sulfide
9.405 Selenium sulfide SeS_2
9.406 L-Serine, diazoacetate (ester)
9.407 Silvex (2, 4, 5-TP)
9.408 Streptozotocin
9.409 Sulfuric acid, dimethyl ester
9.410 Sulfur phosphide
9.411 2, 4, 5-T
9.412 1, 2, 4, 5-Tetrachlorobenzene
9.413 1, 1, 1, 2-Tetrachloroethane
9.414 1, 1, 2, 2-Tetrachloroethane
9.415 Tetrachloroethylene
9.416 2, 3, 4, 6-Tetrachlorophenol
9.417 Tetrachlorofuran
9.418 Thallium acetate
9.419 Thallium carbonate
9.420 Thallium chloride
9.421 Thallium chloride TlCl
9.422 Thallium nitrate
9.423 Thioacetamide
9.424 Thiomethanol
9.425 Thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$, tetramethyl-
9.426 Thiurea
9.427 Thiram
9.428 Toluene
9.429 Toluenediamine

9.430 Toluene diisocyanate
9.431 o-Toluidine
9.432 p-Toluidine
9.433 o-Toluidine hydrochloride
9.434 1H-1, 2, 4-Triazol-3-amine
9.435 1, 1, 2-Trichloroethane
9.436 Trichloroethylene
9.437 Trichloromonofluoromethane
9.438 2, 4, 5-Trichlorophenol
9.439 2, 4, 6-Trichlorophenol
9.440 1, 3, 5-Trinitrobenzene
9.441 1, 3, 5-Trioxane, 2, 4, 6-trimethyl-
9.442 Tris(2, 3-dibromopropyl)phosphate
9.443 Trypan blue
9.444 Uracil mustard
9.445 Urea, N-ethyl-N-nitroso-
9.446 Urea, N-methyl-N-nitroso-
9.447 Vinyl chloride
9.448 Warfarin, & salts, when present at concentrations of 0.3% or less
9.449 Xylene

9.450 Yohimban-16-carboxylic acid, 11, 17-dimethoxy-18-[(3, 4, 5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta, 16beta, 17alpha, 18beta, 20alpha)-

9.451 Zinc phosphide Zn_3P_2, when present at concentrations of 10% or less

Item 4

Hazardous Wastes: Chemical Wastes

10. Residues arising from industrial waste disposal operations

11. Wastes from the manufacture, formulation and use of wood preserving chemicals

12. Wastes from the production, formulation and use of organic solvents

13. Used lubricating oil

14. Waste mineral oils unfit for their originally intended use

15. Waste oils/water, hydrocarbons/water mixtures, emulsions

16. Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)

17. Waste tarry residues arising from refining, distillation, and any pyrolytic treatment

18. Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish

19. Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives

20. Wastes from production, formulation of photographic chemicals and processing materials

21. Waste resulting from surface treatment of metals and plastics

22. Wastes having as constituents:

22.1 Metal carbonyls
22.2 Beryllium; beryllium compounds
22.3 Hexavalent chromium compounds

22.4 Copper compounds
22.5 Zinc compounds
22.6 Arsenic; arsenic compounds
22.7 Selenium; selenium compounds
22.8 Cadmium; cadmium compounds
22.9 Antimony; antimony compounds
22.10 Tellurium, tellurium compounds
22.11 Mercury; mercury compounds
22.12 Thallium, thallium compounds
22.13 Lead; lead compounds
22.14 Inorganic fluorine compounds excluding calcium fluoride
22.15 Organic or inorganic cyanides
22.16 Acidic solutions or acids in solid form
22.17 Basic solutions or bases in solid form
22.18 Asbestos (dust and fibres)
22.19 Organic phosphorus compounds
22.20 Phenols; phenol compounds including chlorophenols
22.21 Ethers
22.22 Halogenated organic solvents
22.23 Organic solvents excluding halogenated solvents
22.24 Any congenor of polychlorinated dibenzo-furan
22.25 Any congenor of polychlorinated dibenzo-p-dioxin

ANNEX2

CRITERIA AND METHODS OF DETOXIFICATION, DISPOSAL, DISCARDING OR LANDFILLING OF WASTES OR UNUSABLE MATERIALS ATTACHED TO THE NOTIFICATION OF THE MINISTRY OF INDUSTRY NO. 6 [B.E. 2540(1997)]

Article 1. Detoxification, disposal, discarding or landfilling of wastes or unusable materials as prescribed in Annex 1 shall be done by the factory operator by any single or chain treatments or disposal methods, depending on characteristics and properties of the wastes or unusable materials concerned, which is subject to the approval of the Director General of the Industrial Works Department or the person assigned by the Director General of the Industrial Works Department, as follows:-

1.1 Physical treatment.
- 1.1.1 Centrifugation
- 1.1.2 Steam distillation and Steam stripping
- 1.1.3 Multi-media filtration
- 1.1.4 Reverse osmosis, Micro-/Ultra-filtration
- *1.1.5* Evaporation
- 1.1.6 Air flotation
- 1.1.7 Gravity thickening
- 1.1.8 Oil/water separator or Coalescence separator

1.2 Physical/Chemical treatment.
- 1.2.1 Soil washing
- 1.2.2 Air stripping
- 1.2.3 Activated carbon adsorption
- 1.2.4 Precipitation/Flocculation
- 1.2.5 Dissolved air flotation

1.2.6 Ion exchange
1.2.7 Liquid/liquid extraction
1.2.8 Filter press, dewatering, vacuum filtration and belt-press filtration

1.3 Chemical treatment
1.3.1 Neutralization and pH adjustment
1.3.2 Oxidation/reduction reactions
1.3.3 Ozonation and UV/ozonation
1.3.4 Electrodialysis
1.3.5 Precipitation
1.3.6 Dechlorination
1.3.7 Dehalogenation

1.4 Biological treatment
1.4.1 Attached film reactors
1.4.2 Activated sludge
1.4.3 Anacrobic digestion
1.4.4 Composting
1.4.5 Stabilization ponds
1.4.6 In situ biological decomposition
1.4.7 Biological detoxification

1.5 Thermal processes for treatment and/or disposal
1.5.1 Wet-air oxidation
1.5.2 Liquid injection incineration
1.5.3 Cement kiln incineration and Rotary kiln incineration
1.5.4 Fluidized bed incineration
1.5.5 Solar evaporation

1.6 Stabilization/fixation/solidification processes
1.6.1 Molten glass
1.6.2 Chemical fixation
1.6.3 Pozzolanic and cement based solidification
1.6.4 Thermoplastic encapsulation
1.6.5 Polymer encapsulation

1.7 Land treatment and/or disposal
1.7.1 Land farming
1.7.2 Spray irrigation
1.7.3 Engineered, secured landfill
1.7.4 Above ground long-term storage
1.7.5 Deep well injection

1.8 The factory operator may use other methods of detoxification, disposal, discarding or landfilling of wastes or unusable materials differing from those specified in Article 1. 1 to Article 1. 7 or other methods verifiable to be equivalent or superior to the specified ones or being methods that reduce the quantities of waste or unusable materials which must be taken to be disposed of by way of adjusting their condition or properties so that they may be safety reused/recycled, i.e. solvent recovery, oil recovery, acid regeneration and metal recovery or

fuels blending for use in co-incineration in industrial kilns/furnaces or wastes exchange for use in production process, as well as use of such various action services of other persons instead.

Article 2. Wastes or unusable materials having undergone stabilization and solidification operations must have the following properties :-

2.1 Being capable of bearing an unconfined compressive strength tested under ASTM standards D-1 633 and D-2166 not less than 3.5 kilograms per square centimeter or essentially being capable of safety bearing a load pressing on top of it when in secured landfill.

2.2 Having a density not less than 1. 15 ton per cubic meter.

2.3 Having a concentration of the leachant or extraction fluid meeting the leachate extraction procedure so as to test that the wastes or unusable materials has fully undergone detoxification and stabilization procedures according to the methods set forth in Article 3 before being taken to landfill.

Article 3. The leachate extraction procedure and the leachant or extraction fluid concentrate analysis procedure shall follow the following methods :-

3.1 Extraction for the purpose of determining the quantities of Teachable substance in the wastes or unusable materials and for the purpose of testing that the waste or unusable material has fully undergone the detoxification or stabilization procedure shall follow the following methods :-

3.1.1 If the waste or unusable material sample is a liquid or has dry solid mixing in a quantity less than 0.5 per cent, filter that sample with a glass fiber filter with a filter hole size of 0.6 to 0.8 micron / and the filtered liquid is analized according to Article 3.2.

3.1.2 If the waste or unusable material sample has dry solid mixing in a quantity exceeding 0.5 per cent, take action as follows :-

(1) Pulverize the waste or unusable material sample and sift it through a sieve with a mesh hole size of 9.5 millimeters.

(2) Add the resultant sample from (1) weighing 100 grams with a leachant or synthetic acid rain extraction fluid, which consists of distilled water mixed with a solution of sulfuric acid and nitric acid (in a ratio of 80 to 20 by weight), until the pH of the mixture has a constant value equal to 5 and then adjust the volume of the mixture so that the ratio of the volume of the mixture so that the ratio of the volume of the leachant is 20 times (milliliters) the weight (grams) of the sample.

(3) Agitate it on a rotary agitator with a revolution speed of 30 revolutions per minute at temperature of 25 degrees Celsius for 18 hours.

(4) Filter the leachate with a glass fiber filter with a filter hold diameter size of 0.6 to 0.8 micron.

(5) Subject the filtered liquid to the analysis under Article 3.2

3.2 To analyze for the value of hazardous substances constitute in the filtered liquid from Article 3. 1.1 or 3.1.2, use the US. EPA. SW 864 standard method or the standard method used in analysing effluent under the Notification of the Ministry of Industry No. 2 [B.E. 2539 (1996)] dated 14th June 1996. Where the analysis result of the leachate shows a value exceeding such standard as set forth in Article 5, Section 1, carry out to redetoxify in order to meet properties as specified.

Form Ror.Ngor. 6

NOTICE ON DETAILS OF WASTES OR UNUSABLE MATERIALS ATTACHED TO THE MINISTRY OF INDUSTRY NO. 6 [B.E. 2540(1997)]

Date :

I,. ..... , Factory operator, office located at ……,
Village……, Lane/Soi ……, Road ……..……,
Sub-District/Sub-Area.....……, District/Area……..,
Province……. ..... , Tel……, Fax…….……,
Factory Registration no..... ..... …….,located at……...,
Village……., Lane/Soi ……, Road……..,
Sub-District/Sub-Area ……., District/Area……,
Province……, Tel……, Fax……..,
hereby notify of details on wastes or unusable materials as per the following particulars :-

Article 1.	Details on wastes or unusable materials and disposal method	Shown in Document no. 1
Article 2.	Sketch map of the place of storage, detoxification, disposal, discarding or landfilling	Shown in Document no. 2
Article 3.	Movement and transport	Shown in Document no. 3
Article 4.	Landfill and monitoring action plan	Shown in Document no. 4
Article 5.	Emergency response plan in case of the occurrence of an accident while	Shown in Document no. 5

collecting, moving, transporting, detoxifying, disposing, discarding or landfilling

Signed:……The factory operator.
( )

Document no. 1

DETAILS ON WASTES OR UNUSABLE MATERIALS AND DISPOSAL METHOD

No.	Belonging in Annex 1		Name of wastes or unusable materials	Quantity	Disposal method	Remark
	Section	Article				

Signed :..... The factory operator.
( )

Document no 2

SKETCH MAP OF PLACE OF STORAGE, DETOXIFICATION, DISPOSAL OR LANDFILL

Signed :..... The factory operator.
( )

Document no 3

MOVEMENT AND TRANSPORT

1. Method of movement and transport.

2. The container, the vehicle type and the vehicle registration number.

3. The transportation route for storage, detoxification, disposal, discarding or landfilling.

4. The transporter (if any):-

4.1 Name……
Address / Office .....
…….

4.2 Name……
Address / Office .....
…….

5. Copy of Uniform Industrial Hazardous waste manifest.

Signed :..... The factory operator.
( )

Document no 4

LANDFILL AND MONITORING PLAN (IF ANY)

1. Landfill procedure

2. Monitoring procedure

Signed :..... The factory operator.

( )

Document no 5

EMERGENCY RESPONSE PLAN

1 While storing

2. While moving or transporting

3. While detoxifying, disposing, discarding or landfilling

Signed:..... The factory operator.
( )