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Title 40 —Protection of Environment
Chapter I —Environmental Protection Agency
Subchapter D —Water Programs

Part 116 Designation of Hazardous Substances

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PART 116—DESIGNATION OF HAZARDOUS SUBSTANCES

Authority: 33 U.S.C. 1251 *et seq.*

§ 116.1 Applicability.

This regulation designates hazardous substances under section 311(b)(2)(A) of the Federal Water Pollution Control Act (the Act). The regulation applies to discharges of substances designated in Table 116.4.

[43 FR 10474, Mar. 13, 1978]

§ 116.2 Abbreviations.

ppm = parts per million

mg = milligram(s)

kg = kilogram(s)

mg/l = milligrams(s) per liter= (approx.) ppm

mg/kg = milligram(s) per kilogram= (approx.) ppm

[43 FR 10474, Mar. 13, 1978]

§ 116.3 Definitions.

As used in this part, all terms shall have the meaning defined in the Act and as given below:

The Act means the Federal Water Pollution Control Act, as amended by the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500), and as further amended by the Clean Water Act of 1977 (Pub. L. 95-217), 33 U.S.C. 1251 *et seq.*; and as further amended by the Clean Water Act Amendments of 1978 (Pub. L. 95-676);

Animals means appropriately sensitive animals which carry out respiration by means of a lung structure permitting gaseous exchange between air and the circulatory system;

Aquatic animals means appropriately sensitive wholly aquatic animals which carry out respiration by means of a gill structure permitting gaseous exchange between the water and the circulatory system;

Aquatic flora means plant life associated with the aquatic eco-system including, but not limited to, algae and higher plants;

Contiguous zone means the entire zone established or to be established by the United States under article 24 of the Convention of the Territorial Sea and the Contiguous Zone;

Discharge includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying or dumping, but excludes (A) discharges in compliance with a permit under section 402 of this Act, (B) discharges resulting from circumstances identified and reviewed and made a part of the public record with respect to a permit issued or modified under section 402 of this Act, and subject to a condition in such permit, and (C) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of this Act, which are caused by events occurring within the scope of relevant operating or treatment systems;

LC50 means that concentration of material which is lethal to one-half of the test population of aquatic animals upon continuous exposure for 96 hours or less.

Mixture means any combination of two or more elements and/or compounds in solid, liquid, or gaseous form except where such substances have undergone a chemical reaction so as to become inseparable by physical means.

Navigable waters means “waters of the United States,” including the territorial seas, as defined in § 120.2 of this chapter.

Offshore facility means any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel;

Onshore facility means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under, any land within the United States other than submerged land;

Otherwise subject to the jurisdiction of the United States means subject to the jurisdiction of the United States by virtue of United States citizenship, United States vessel documentation or numbering, or as provided for by international agreement to which the United States is a party.

A discharge in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976), means: (1) A discharge into any waters beyond the contiguous zone from any vessel or onshore or offshore facility, which vessel or facility is subject to or is engaged in activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, and (2) any discharge into any

waters beyond the contiguous zone which contain, cover, or support any natural resource belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976).

Public vessel means a vessel owned or bareboat-chartered and operated by the United States, or a State or political subdivision thereof, or by a foreign nation, except when such vessel is engaged in commerce.

Territorial seas means the belt of the seas measured from the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters, and extending seaward a distance of 3 miles.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water other than a public vessel;

[43 FR 10474, Mar. 13, 1978; 43 FR 27533, June 26, 1978, as amended at 44 FR 10266, Feb. 16, 1979; 58 FR 45039, Aug. 25, 1993; 80 FR 37110, June 29, 2015; 83 FR 5208, Feb. 6, 2018; 84 FR 56668, Oct. 22, 2019; 85 FR 22339, Apr. 21, 2020]

§ 116.4 Designation of hazardous substances.

The elements and compounds appearing in Tables 116.4 A and B are designated as hazardous substances in accordance with section 311(b)(2)(A) of the Act. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing these substances. Synonyms and Chemical Abstract System (CAS) numbers have been added for convenience of the user only. In case of any disparity the common names shall be considered the designated substance.

TABLE 116.4A—LIST OF HAZARDOUS SUBSTANCES

| Common name | CAS No. | Synonyms | Isomers | CAS |
|---------------------|----------|--|---------|-----|
| Acetaldehyde | 75070 | Ethanal, ethyl aldehyde, acetic aldehyde | | |
| Acetic acid | 64197 | Glacial acetic acid, vinegar acid | | |
| Acetic anhydride | 108247 | Acetic oxide, acetyl oxide | | |
| Acetone cyanohydrin | 75865 | 2-methylactonitrile, alpha-hydroxyisobutyronitrile | | |
| Acetyl bromide | 506967 | | | |
| Acetyl chloride | 79367 | | | |
| Acrolein | 107028 | 2-propenal, acrylic aldehyde, acrylaldehyde, acraldehyde | | |
| Acrylonitrile | 107131 | Cyanoethylene, Fumigrain, Ventox, propeneitrile, vinyl cyanide | | |
| Adipic acid | 124049 | Hexanedioic acid | | |
| Aldrin | 309002 | Octalene, HHDN | | |
| Allyl alcohol | 107186 | 2-propen-1-ol, 1-propenol-3, vinyl carbinol | | |
| Allyl chloride | 107051 | 3-chloropropene, 3-chloropropylene, Chlorallylene | | |
| Aluminum sulfate | 10043013 | Alum | | |
| Ammonia | 7664417 | | | |
| Ammonium acetate | 631618 | Acetic acid ammonium, salt | | |
| Ammonium benzoate | 1863634 | | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|-----------------------------|----------|---|-----------------------|----------------|
| Ammonium bicarbonate | 1066337 | Acid ammonium carbonate, ammonium hydrogen carbonate | | |
| Ammonium bichromate | 7789095 | | | |
| Ammonium bifluoride | 1341497 | Acid ammonium fluoride, ammonium hydrogen fluoride | | |
| Ammonium bisulfite | 10192300 | | | |
| Ammonium carbamate | 1111780 | Ammonium aminoformate | | |
| Ammonium carbonate | 506876 | | | |
| Ammonium chloride | 12125029 | Ammonium muriate, sal ammoniac, salmiac, Amchlor | | |
| Ammonium chromate | 7788989 | | | |
| Ammonium citrate dibasic | 3012655 | Diammonium citrate, citric acid diammonium salt | | |
| Ammonium fluoborate | 13826830 | Ammonium fluoroborate, ammonium borofluoride | | |
| Ammonium fluoride | 12125018 | Neutral ammonium fluoride | | |
| Ammonium hydroxide | 1336216 | | | |
| Ammonium oxalate | 6009707 | | | |
| | 5972736 | | | |
| | 14258492 | | | |
| Ammonium silicofluoride | 16919190 | Ammonium fluosilicate | | |
| Ammonium sulfamate | 7773060 | Ammate, AMS, ammonium amidosulfate | | |
| Ammonium sulfide | 12135761 | | | |
| Ammonium sulfite | 10196040 | | | |
| | 10192300 | | | |
| Ammonium tartrate | 3164292 | Tartaric acid ammonium salt | | |
| | 14307438 | | | |
| Ammonium thiocyanate | 1762954 | Ammonium rhodanide, ammonium sulfocyanate, ammonium sulfocyanide | | |
| Amly acetate | 628637 | Amylacetic ester Pear oil Banana oil | iso- sec- tert- | 12 62 62 |
| Aniline | 62533 | Aniline oil, phenylamine, aminobenzene, aminophen, kyanol | | |
| Antimony pentachloride | 7647189 | | | |
| Antimony potassium tartrate | 28300745 | Tartar emetic, tartrated antimony, tartarized antimony, potassium antimonyltartrate | | |
| Antimony tribromide | 7789619 | | | |
| Antimony trichloride | 10025919 | Butter of antimony | | |
| Antimony trifluoride | 7783564 | Antimony fluoride | | |
| Antimony trioxide | 1309644 | Diantimony trioxide, flowers of antimony | | |
| Arsenic disulfide | 1303328 | Red arsenic sulfide | | |
| Arsenic pentoxide | 1303282 | Arsenic acid anhydride, arsenic oxide | | |
| Arsenic trichloride | 7784341 | Arsenic chloride, arsenious chloride, arsenous chloride, butter of arsenic | | |
| Arsenic trioxide | 1327533 | Arsenious acid, arsenious oxide, white arsenic | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|---------------------------------|----------|--|-------------------------------|----------------------|
| Arsenic trisulfide | 1303339 | Arsenious sulfide, yellow arsenic sulfide | | |
| Barium cyanide | 542621 | | | |
| Benzene | 71432 | Cyclohexatriene, benzol | | |
| Benzoic acid | 65850 | Benzenecarboxylic acid, phenylformic acid, dracylic acid | | |
| Benzonitrile | 100470 | Phenyl cyanide, cyanobenzene | | |
| Benzoyl chloride | 98884 | Benzenecarbonyl chloride | | |
| Benzyl chloride | 100447 | | | |
| Beryllium chloride | 7787475 | | | |
| Beryllium fluoride | 7787497 | | | |
| Beryllium nitrate | 7787555 | | | |
| | 13597994 | | | |
| Butyl acetate | 123864 | Acetic acid butyl ester | iso- sec- tert- | 11 10 54 |
| Butylamine | 109739 | 1-aminobutane | iso- sec- sec- tert- | 7 51 1395 7 |
| n/butyl phthalate | 84742 | 1.2-benzenedicarboxylic acid, dibutyl ester, dibutyl phthalate | | |
| Butyric acid | 107926 | Butanoic acid, ethylacetic acid | iso- | 7 |
| Cadmium acetate | 543908 | | | |
| Cadmium bromide | 7789426 | | | |
| Cadmium chloride | 10108642 | | | |
| Calcium arsenate | 7778441 | Tricalcium orthoarsenate | | |
| Calcium arsenite | 52740166 | | | |
| Calcium carbide | 75207 | Carbide, acetylenogen | | |
| Calcium chromate | 13765190 | Calcium chrome yellow, geblin, yellow ultramarine | | |
| Calcium cyanide | 592018 | | | |
| Calcium dodecylbenzenesulfonate | 26264062 | | | |
| Calcium hypochlorite | 7778543 | | | |
| Captan | 133062 | Orthocide-406, SR-406, Vancide-89 | | |
| Carbaryl | 63252 | Sevin | | |
| Carbofuran | 1563662 | Furadan | | |
| Carbon disulfide | 75150 | Carbon bisulfide, dithiocarbonic anhydride | | |
| Carbon tetrachloride | 56235 | Tetrachloromethane Perchloromethane | | |
| Chlordane | 57749 | Toxichlor, chlordan | | |
| Chlorine | 75003 | | | |
| Chlorobenzene | 108907 | Monochlorobenzene, benzene chloride | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|----------------------------|----------|--|---------|-----|
| Chloroform | 67663 | Trichloromethane | | |
| Chlorpyrifos | 2921882 | Dursban | | |
| Chlorosulfonic acid | 7790945 | Sulfuric chlorohydrin | | |
| Chromic acetate | 1066304 | | | |
| Chromic acid | 11115745 | Chromic anhydride, chromium trioxide | | |
| Chromic sulfate | 10101538 | | | |
| Chromous chloride | 10049055 | | | |
| Cobaltous bromide | 7789437 | Cobalt bromide | | |
| Coaltous formate | 544183 | Cobalt formate | | |
| Cobaltous sulfamate | 14017415 | Cobalt sulfamate | | |
| Coumaphos | 56724 | Co-Ral | | |
| Cresol | 1319773 | Cresylic acid | m- | 10 |
| | | Hydroxytoluene | o- | 9 |
| | | | p- | 10 |
| Crotonaldehyde | 4170303 | 2-butenal propylene aldehyde | | |
| Cupric acetate | 142712 | Copper acetate, crystalized verdigris | | |
| Cupric acetoarsenite | 12002038 | Copper acetoarsenite, copper acetate arsenite, Paris green | | |
| Cupric chloride | 7447394 | Copper chloride | | |
| Cupric nitrate | 3251238 | Copper nitrate | | |
| Cupric oxalate | 5893663 | Copper oxalate | | |
| Cupric sulfate | 7758987 | Copper sulfate | | |
| Cupric sulfate, ammoniated | 10380297 | Ammoniated copper sulfate | | |
| Cupric tartrate | 815827 | Copper tartrate | | |
| Cyanogen chloride | 506774 | | | |
| Cyclohexane | 110827 | Hexahydrobenzene, hexamethylene, hexanaphthene | | |
| 2,4-D acid | 94757 | 2,4-dichlorophenoxyacetic acid | | |
| 2,4-D ester | 94111 | 2,4-dichlorophenoxyacetic acid ester | | |
| | 94791 | | | |
| | 94804 | | | |
| | 1320189 | | | |
| | 1928387 | | | |
| | 1928616 | | | |
| | 1929733 | | | |
| | 2971382 | | | |
| | 25168267 | | | |
| | 53467111 | | | |
| DDT | 50293 | p,p'-DDT | | |
| Diazinon | 333415 | Dipofene, Diazitol, Basudin, Spectracide | | |
| Dicamba | 1918009 | 2-methoxy-3,6-dichlorobenzoic acid | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|---|----------|---|---------|-----|
| Dichlobenil | 1194656 | 2,6-dichlorobenzonitrile, 2,6-DBN | | |
| Dichlone | 117806 | Phygon, dichloronaphthoquinone | | |
| Dichlorobenzene | 25321226 | Di-chloricide | Ortho | 9 |
| | | Paramoth (Para) | Para | 10 |
| Dichloropropane | 26638197 | Propylene dichloride | 1,1 | 7 |
| | | | 1,2 | 7 |
| | | | 1,3 | 14 |
| Dichloropropene | 26952238 | | 1,3 | 54 |
| | | | 2,3 | 7 |
| Dichloropropene- dichloropropane (mixture) | 8003198 | D-D mixture Vidden D | | |
| 2,2-Dichloropropionic acid | 75990 | Dalapon | | |
| Dichlorvos | 62737 | 2,2-dichlorovinyl dimethyl phosphate, Vapona | | |
| Dicofol | 115322 | Di(p-chlorophenyl)-trichloromethylcarbinol, DTMC, dicofol | | |
| Dieldrin | 60571 | Alvit | | |
| Diethylamine | 109897 | | | |
| Dimethylamine | 124403 | | | |
| Dinitrobenzene (mixed) | 25154545 | Dinitrobenzol | m- | 9 |
| | | | o- | 52 |
| | | | p- | 10 |
| Dinitrophenol | 51285 | Aldifen | (2,5-) | 32 |
| | | | (2,4-) | |
| | | | (2,6-) | 57 |
| Dinitrotoluene | 25321146 | DNT | 2,4 | 12 |
| | | | 2,6 | 60 |
| | | | 3,4 | 61 |
| Diquat | 85007 | Aquacide | | |
| | 2764729 | Dextrone, Reglone, Diquat dibromide | | |
| Disulfoton | 298044 | Di-syston | | |
| Diuron | 330541 | DCMU, DMU | | |
| Dodecylbenzenesulfonic acid | 27176870 | | | |
| Endosulfan | 115297 | Thiodan | | |
| Endrin | 72208 | Mendrin, Compound 269 | | |
| Epichlorohydrin | 106898 | -chloropropylene oxide | | |
| Ethion | 563122 | Nialate, ethyl methylene, phosphorodithioate | | |
| Ethylbenzene | 100414 | Phenylethane | | |
| Ethylenediamine | 107153 | 1,2-diaminoethane | | |
| Ethylenediamine- tetraacetic acid (EDTA) | 60004 | Edetic acid, Havidote, (ethylenedinitrilo)-tetraacetic acid | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|---------------------------|----------|---|---------|-----|
| Ethylene dibromide | 106934 | 1,2-dibromoethane acetylene dibromide sym-dibromoethylene | | |
| Ethylene dichloride | 107062 | 1,2-dichloroethane sym-bichloroethane | | |
| Ferric ammonium citrate | 1185575 | Ammonium ferric citrate | | |
| Ferric ammonium oxalate | 2944674 | Ammonium ferric oxalate | | |
| | 55488874 | | | |
| Ferric chloride | 7705080 | Flores martis, iron trichloride | | |
| Ferric fluoride | 7783508 | | | |
| Ferric nitrate | 10421484 | Iron nitrate | | |
| Ferric sulfate | 10028225 | Ferric persulfate, ferric sesquisulfate, ferric tersulfate | | |
| Ferrous ammonium sulfate | 10045893 | Mohr's salt, iron ammonium sulfate | | |
| Ferrous chloride | 7758943 | Iron chloride, iron dichloride, iron protochloride | | |
| Ferrous sulfate | 7720787 | Green vitriol | | |
| | 7782630 | Iron vitriol, iron sulfate, iron protosulfate | | |
| Formaldehyde | 50000 | Methyl aldehyde, methanal, formalin | | |
| Formic acid | 64186 | Methanoic acid | | |
| Fumaric acid | 110178 | Trans-butenedioic acid, trans-1,2-ethylenedicarboxylic acid, boletic acid, allomaleic acid | | |
| Furfural | 98011 | 2-furaldehyde, pyromucic aldehyde | | |
| Guthion | 86500 | Gusathion, azinphos-methyl | | |
| Heptachlor | 76448 | Velsicol-104, Drinox, Heptagran | | |
| Hexachlorocyclopentadiene | 77474 | Perchlorocyclopentadiene | | |
| Hydrochloric acid | 7647010 | Hydrogen chloride, muriatic acid | | |
| Hydrofluoric acid | 7664393 | Fluohydric acid | | |
| Hydrogen cyanide | 74908 | Hydrocyanic acid | | |
| Hydrogen sulfide | 7783064 | Hydrosulfuric acid sulfur hydride | | |
| Isoprene | 78795 | 2-methyl-1,3-butadiene | | |
| Isopropanolamine | 42504461 | | | |
| dodecylbenzenesulfonate | | | | |
| Kepone | 143500 | Chlordecone 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(cd)pentalen-2-one | | |
| Lead acetate | 301042 | Sugar of lead | | |
| Lead arsenate | 7784409 | | | |
| | 7645252 | | | |
| | 10102484 | | | |
| Lead chloride | 7758954 | | | |
| Lead fluoborate | 13814965 | Lead fluoroborate | | |
| Lead fluoride | 7783462 | Lead difluoride, plumbous fluoride | | |
| Lead iodide | 10101630 | | | |
| Lead nitrate | 10099748 | | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|-------------------------|--------------------------------|---|---------|-----|
| Lead stearate | 7428480 1072351 52652592 | Stearic acid lead salt | | |
| Lead sulfate | 7446142 | | | |
| Lead sulfide | 1314870 | Galena | | |
| Lead thiocyanate | 592870 | Lead sulfocyanate | | |
| Lindane | 58899 | Gamma-BHC, gamma-benzene hexachloride | | |
| Lithium chromate | 14307358 | | | |
| Malathion | 121755 | Phosphothion | | |
| Maleic acid | 110167 | Cis-butenedioic acid, cis-1,2-ethylenedicarboxylic acid, toxilic acid | | |
| Maleic anhydride | 108316 | 2,5-furandione, cis-butenedioic anhydride, toxilic anhydride | | |
| Mercaptodimethur | 203657 | Mesurool | | |
| Mercuric cyanide | 592041 | Mercury cyanide | | |
| Mercuric nitrate | 10045940 | Mercury nitrate, mercury pernitrate | | |
| Mercuric sulfate | 7783359 | Mercury sulfate, mercury persulfate | | |
| Mercuric thiocyanate | 592858 | Mercury thiocyanate, mercuric sulfocyanate, mercuric sulfocyanide | | |
| Mercurous nitrate | 7782867 10415755 | Mercury protonitrate | | |
| Methoxychlor | 72435 | DMDT, methoxy-DDT | | |
| Methyl mercaptan | 74931 | Methanethiol, mercaptomethane, methyl sulfhydrate, thiomethyl alcohol | | |
| Methyl methacrylate | 80626 | Methacrylic acid methyl ester, methyl-2-methyl-2-propenoate | | |
| Methyl parathion | 298000 | Nitrox-80 | | |
| Mevinphos | 7786347 | Phosdrin | | |
| Mexacarbate | 315184 | Zectran | | |
| Monoethylamine | 75047 | Ethylamine, aminoethane | | |
| Monomethylamine | 74895 | Methylamine, aminomethane | | |
| Naled | 300765 | Dibrom | | |
| Naphthalene | 91203 | White tar, tar camphor, naphthalin | | |
| Naphthenic acid | 1338245 | Cyclohexanecarboxylic acid, hexahydrobenzoic acid | | |
| Nickel ammonium sulfate | 15699180 | Ammonium nickel sulfate | | |
| Nickel chloride | 37211055 7718549 | Nickelous chloride | | |
| Nickel hydroxide | 12054487 | Nickelous hydroxide | | |
| Nickel nitrate | 14216752 | | | |
| Nickel sulfate | 7786814 | Nickelous sulfate | | |
| Nitric acid | 7697372 | Aqua fortis | | |
| Nitrobenzene | 98953 | Nitrobenzol, oil of mirbane | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|---------------------------|----------|--|---------|-----|
| Nitrogen dioxide | 10102440 | Nitrogen tetraoxide | | |
| Nitrophenol (mixed) | 25154556 | Mononitrophenol | m- | 55 |
| | | | o- | 8 |
| | | | p- | 10 |
| Nitrotoluene | 1321126 | | Ortho | 8 |
| | | | Meta | 9 |
| | | | Para | 9 |
| Paraformaldehyde | 30525894 | Paraform, Formagene, Triformol, polymerized formaldehyde, polyoxymethylene | | |
| Parathion | 56382 | DNTP, Niran | | |
| Pentachlorophenol | 87865 | PCP, Penta | | |
| Phenol | 108952 | Carbolic acid, phenyl hydroxide, hydroxybenzene, oxybenzene | | |
| Phosgene | 75445 | Diphosgene, carbonyl chloride, chloroformyl chloride | | |
| Phosphoric acid | 7664382 | Orthophosphoric acid | | |
| Phosphorus | 7723140 | Black phosphorus, red phosphorus, white phosphorus, yellow phosphorus | | |
| Phosphorus oxychloride | 10025873 | Phosphoryl chloride, phosphorus chloride | | |
| Phosphorus pentasulfide | 1314803 | Phosphoric sulfide, thiophosphoric anhydride, phosphorus persulfide | | |
| Phosphorus trichloride | 7719122 | Phosphorous chloride | | |
| Polychlorinated biphenyls | 1336363 | PCB, Aroclor, polychlorinated diphenyls | | |
| Potassium arsenate | 7784410 | | | |
| Potassium arsenite | 10124502 | Potassium metaarsenite | | |
| Potassium bichromate | 7778509 | Potassium dichromate | | |
| Potassium chromate | 7789006 | | | |
| Potassium cyanide | 151508 | | | |
| Potassium hydroxide | 1310583 | Potassium hydrate, caustic potash, potassa | | |
| Potassium permanganate | 7722647 | Chameleon mineral | | |
| Propargite | 2312358 | Omite | | |
| Propionic acid | 79094 | Propanoic acid, methylacetic acid, ethylformic acid | | |
| Propionic anhydride | 123626 | Propanoic anhydride, methylacetic anhydride | | |
| Propylene oxide | 75569 | Propene oxide | | |
| Pyrethrins | 121299 | Pyrethrin I | | |
| | 121211 | Pyrethrin II | | |
| Quinoline | 91225 | 1-benzazine, benzo(b)pyridine, leuocoline, chinoleine, leucol | | |
| Resorcinol | 108463 | Resorcin, 1,3-benzenediol, meta-dihydroxybenzene | | |
| Selenium oxide | 7446084 | Selenium dioxide | | |
| Silver nitrate | 7761888 | Nitric acid silver (1 +) salt lunar caustic | | |
| Sodium | 7440235 | Natrium | | |
| Sodium arsenate | 7631892 | Disodium arsenate | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|---------------------------------|----------|---|---------|-----|
| Sodium arsenite | 7784465 | Sodium metaarsenite | | |
| Sodium bichromate | 10588019 | Sodium dichromate | | |
| Sodium bifluoride | 1333831 | | | |
| Sodium bisulfite | 7631905 | Sodium acid sulfite, sodium hydrogen sulfite | | |
| Sodium chromate | 7775113 | | | |
| Sodium cyanide | 143339 | | | |
| Sodium dodecylbenzene-sulfonate | 25155300 | | | |
| Sodium fluoride | 7681494 | Villiaumite | | |
| Sodium hydrosulfide | 16721805 | Sodium hydrogen sulfide | | |
| Sodium hydroxide | 1310732 | Caustic soda, soda lye, sodium hydrate | | |
| Sodium hypochlorite | 7681529 | Bleach | | |
| | 10022705 | | | |
| Sodium methylate | 124414 | Sodium methoxide | | |
| Sodium nitrite | 7632000 | | | |
| Sodium phosphate, dibasic | 7558794 | | | |
| | 10039324 | | | |
| | 10140655 | | | |
| Sodium phosphate, tribasic | 7601549 | | | |
| | 10101890 | | | |
| | 10361894 | | | |
| Sodium selenite | 10102188 | | | |
| | 7782823 | | | |
| Strontium chromate | 7789062 | | | |
| Strychnine | 57249 | | | |
| Styrene | 100425 | Vinylbenzene, phenylethylene, styrol, styrolene, cinnamene, cinnamol | | |
| Sulfuric acid | 7664939 | Oil of vitriol, oleum | | |
| Sulfur monochloride | 12771083 | Sulfur chloride | | |
| 2,4,5-T acid | 93765 | 2,4,5-trichlorophenoxyacetic acid | | |
| 2,4,5-T amines | 6369966 | Acetic acid (2,4,5-trichlorophenoxy)-compound with N,N-dimethylmethanamine (1:1) | | |
| | 6369977 | Acetic acid (2,4,5-trichlorophenoxy)-compound with N-methylmethanamine (1:1) | | |
| | 1319728 | Acetic acid (2,4,5-trichlorophenoxy)-compound with 1-amino-2-propanol (1:1) | | |
| | 3813147 | Acetic acid (2,4,5-trichlorophenoxy)-compound with 2,2'2"-nitrilotris [ethanol] (1:1) | | |
| 2,4,5-T esters | 2545597 | 2,4,5-trichlorophenoxyacetic esters | | |
| | 93798 | | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|--------------------------|----------|---|--|----------------------------------|
| | 61792072 | | | |
| | 1928478 | | | |
| | 25168154 | | | |
| 2,4,5-T salts | 13560991 | Acetic acid (2,4,5-trichlorophenoxy)-sodium salt | | |
| TDE | 72548 | DDD | | |
| 2,4,5-TP acid | 93721 | Propanoic acid 2-(2,4,5-trichlorophenoxy) | | |
| 2,4,5-TP esters | 32534955 | Propanoic acid, 2-(2,4,5-trichlorophenoxy)-, isooctyl ester | | |
| Tetraethyl lead | 78002 | Lead tetraethyl, TEL | | |
| Tetraethyl pyrophosphate | 107493 | TEPP | | |
| Thallium sulfate | 10031591 | | | |
| | 7446186 | | | |
| Toluene | 108883 | Toluol, methylbenzene, phenylmethane, Methacide | | |
| Toxaphene | 8001352 | Camphechlor | | |
| Trichlorfon | 52686 | Dipterex Dylox | | |
| Trichlorethylene | 79016 | Ethylene trichloride | | |
| Trichlorophenol | 25167822 | Collunosol, Dowicide 2 or 2S, Omal, Phenachlor | (2,3,4-) (2,3,5-) (2,3,6-) (2,4,5-) (2,4,6-) (3,4,5-) | 1595 93 93 9 8 60 |
| Triethanolamine | 27323417 | | | |
| dodecylbenzenesulfonate | | | | |
| Triethylamine | 121448 | | | |
| Trimethylamine | 75503 | TMA | | |
| Uranyl acetate | 541093 | | | |
| Uranyl nitrate | 10102064 | | | |
| | 36478769 | | | |
| Vanadium pentoxide | 1314621 | Vanadic anhydride, vanadic acid anhydride | | |
| Vanadyl sulfate | 27774136 | Vanadic sulfate, vanadium sulfate | | |
| Vinyl acetate | 108054 | Acetic acid ethylene ether | | |
| Vinylidene chloride | 75354 | 1,1-dichlorethylene 1,1-dichloroethene | | |
| Xylene (mixed) | 1330207 | Dimethylbenzene Xylol | m- o- p- | 10 9 10 |
| Xylenol | 1300716 | Dimethylphenol, hydroxydimethylbenzene | | |
| Zinc acetate | 557346 | | | |
| Zinc ammonium chloride | 14639975 | | | |

| Common name | CAS No. | Synonyms | Isomers | CAS |
|------------------------------|----------|---|---------|-----|
| | 14639986 | | | |
| | 52628258 | | | |
| Zinc borate | 1332076 | | | |
| Zinc bromide | 7699458 | | | |
| Zinc carbonate | 3486359 | | | |
| Zinc chloride | 7646857 | Butter of zinc | | |
| Zinc cyanide | 557211 | | | |
| Zinc fluoride | 7783495 | | | |
| Zinc formate | 557415 | | | |
| Zinc hydrosulfite | 7779864 | | | |
| Zinc nitrate | 7779886 | | | |
| Zinc phenolsulfonate | 127822 | Zinc sulfocarbolate | | |
| Zinc phosphide | 1314847 | | | |
| Zinc silicofluoride | 16871719 | Zinc fluosilicate | | |
| Zinc sulfate | 7733020 | White vitriol, zinc vitriol, white copperas | | |
| Zirconium nitrate | 13746899 | | | |
| Zirconium potassium fluoride | 16923958 | | | |
| Zirconium sulfate | 14644612 | Disulfatozirconic acid | | |
| Zirconium tetrachloride | 10026116 | | | |

TABLE 116.4B—LIST OF HAZARDOUS SUBSTANCES BY CAS NUMBER

| CAS No. | Common name |
|---------|--|
| 50000 | Formaldehyde |
| 50293 | DDT |
| 51285 | 2,4-Dinitrophenol |
| 52686 | Trichlorfon |
| 56382 | Parathion |
| 56724 | Coumaphos |
| 57249 | Strychnine |
| 57749 | Chlordane |
| 58899 | Lindane |
| 60004 | Ethylenediaminetetraacetic acid (EDTA) |
| 60571 | Dieldrin |

| CAS No. | Common name |
|---------|----------------------------|
| 62533 | Aniline |
| 62737 | Dichlorvos |
| 63252 | Carbaryl |
| 64186 | Formic acid |
| 64197 | Acetic acid |
| 65850 | Benzoic acid |
| 67663 | Chloroform |
| 71432 | Benzene |
| 72208 | Endrin |
| 72435 | Methoxychlor |
| 72548 | TDE |
| 74895 | Monomethylamine |
| 74908 | Hydrogen cyanide |
| 74931 | Methyl mercaptan |
| 75047 | Monoethylamine |
| 75070 | Acetaldehyde |
| 75150 | Carbon disulfide |
| 75207 | Calcium carbide |
| 75445 | Phosgene |
| 75503 | Trimethylamine |
| 75649 | tert-Butylamine |
| 75865 | Acetone cyanohydrin |
| 75990 | 2,2-Dichloropropionic acid |
| 76448 | Heptachlor |
| 78002 | Tetraethyl lead |
| 78795 | Isoprene |
| 78819 | iso-Butylamine |
| 79094 | Propionic acid |
| 79312 | iso-Butyric acid |
| 79367 | Acetyl chloride |
| 80626 | Methyl methacrylate |
| 85007 | Diquat |
| 86500 | Guthion |
| 87865 | Pentachlorophenol |
| 88755 | o-Nitrophenol |
| 91203 | Naphthalene |
| 91225 | Quinoline |
| 93765 | 2,4,5-T acid |
| 93798 | 2,4,5-T ester |

| CAS No. | Common name |
|---------|--------------------------|
| 94111 | 2,4-D ester |
| 94757 | 2,4-D acid |
| 94791 | 2,4-D ester |
| 94804 | 2,4-D Butyl ester |
| 95476 | o-Xylene |
| 95487 | o-Cresol |
| 98011 | Furfural |
| 98884 | Benzoyl chloride |
| 98953 | Nitrobenzene |
| 99650 | m-Dinitrobenzene |
| 100027 | p-Nitrophenol |
| 100254 | p-Dinitrobenzene |
| 100414 | Ethylbenzene |
| 100425 | Styrene |
| 100447 | Benzyl chloride |
| 100470 | Benzonitrile |
| 105464 | sec-Butyl acetate |
| 106423 | p-Xylene |
| 106445 | p-Cresol |
| 107028 | Acrolein |
| 107051 | Allyl chloride |
| 107131 | Acrylonitrile |
| 107153 | Ethylenediamine |
| 107186 | Allyl alcohol |
| 107493 | Tetraethyl pyrophosphate |
| 107926 | n-Butyric acid |
| 108054 | Vinyl acetate |
| 108247 | Acetic anhydride |
| 108316 | Maleic anhydride |
| 108383 | m-Xylene |
| 108394 | m-Cresol |
| 108463 | Resorcinol |
| 108883 | Toluene |
| 108907 | Chlorobenzene |
| 108952 | Phenol |
| 109739 | n-Butylamine |
| 109897 | Diethylamine |
| 110167 | Maleic acid |
| 110178 | Fumaric acid |

| CAS No. | Common name |
|---------|----------------------|
| 110190 | iso-Butyl acetate |
| 110827 | Cyclohexane |
| 115297 | Endosulfan |
| 115322 | Dicofol |
| 117806 | Dichlone |
| 121211 | Pyrethrin |
| 121299 | Pyrethrin |
| 121448 | Triethylamine |
| 121755 | Malathion |
| 123626 | Propionic anhydride |
| 123864 | n-Butyl acetate |
| 123922 | iso-Amyl acetate |
| 124403 | Dimethylamine |
| 124414 | Sodium methylate |
| 127822 | Zinc phenolsulfonate |
| 133062 | Captan |
| 142712 | Cupric acetate |
| 143339 | Sodium cyanide |
| 151508 | Potassium cyanide |
| 298000 | Methyl parathion |
| 298044 | Disulfoton |
| 300765 | Naled |
| 301042 | Lead acetate |
| 309002 | Aldrin |
| 315184 | Mexacarbate |
| 329715 | 2,5-Dinitrophenol |
| 330541 | Diuron |
| 333415 | Diazinon |
| 506774 | Cyanogen chloride |
| 506876 | Ammonium carbonate |
| 506967 | Acetyl bromide |
| 513495 | sec-Butylamine |
| 528290 | o-Dinitrobenzene |
| 540885 | tert-Butyl acetate |
| 541093 | Uranyl acetate |
| 542621 | Barium cyanide |
| 543908 | Cadmium acetate |
| 544183 | Cobaltous formate |
| 554847 | m-Nitrophenol |

| CAS No. | Common name |
|---------|---------------------------|
| 557211 | Zinc cyanide |
| 557346 | Zinc acetate |
| 557415 | Zinc formate |
| 563122 | Ethion |
| 573568 | 2,6-Dinitrophenol |
| 592018 | Calcium cyanide |
| 592041 | Mercuric cyanide |
| 592858 | Mercuric thiocyanate |
| 592870 | Lead thiocyanate |
| 625161 | tert-Amyl acetate |
| 626380 | sec-Amyl acetate |
| 628637 | n-Amyl acetate |
| 631618 | Ammonium acetate |
| 815827 | Cupric tartrate |
| 1066304 | Chromic acetate |
| 1066337 | Ammonium bicarbonate |
| 1072351 | Lead stearate |
| 1111780 | Ammonium carbamate |
| 1185575 | Ferric ammonium citrate |
| 1194656 | Dichlobenil |
| 1300716 | Xylenol |
| 1303282 | Arsenic pentoxide |
| 1303328 | Arsenic disulfide |
| 1303339 | Arsenic trisulfide |
| 1309644 | Antimony trioxide |
| 1310583 | Potassium hydroxide |
| 1310732 | Sodium hydroxide |
| 1314621 | Vanadium pentoxide |
| 1314803 | Phosphorus pentasulfide |
| 1314847 | Zinc phosphide |
| 1314870 | Lead sulfide |
| 1319773 | Cresol (mixed) |
| 1320189 | 2,4-D ester |
| 1327533 | Arsenic trioxide |
| 1330207 | Xylene |
| 1332076 | Zinc borate |
| 1333831 | Sodium bifluoride |
| 1336216 | Ammonium hydroxide |
| 1336363 | Polychlorinated biphenyls |

| CAS No. | Common name |
|---------|----------------------------|
| 1338245 | Naphthenic acid |
| 1341497 | Ammonium bifluoride |
| 1762954 | Ammonium thiocyanate |
| 1863634 | Ammonium benzoate |
| 1918009 | Dicamba |
| 1928387 | 2,4-D esters |
| 1928478 | 2,4,5-T ester |
| 1928616 | 2,4-D ester |
| 1929733 | 2,4-D ester |
| 2545597 | 2,4,5-T ester |
| 2764729 | Diquat |
| 2921882 | Chlorpyrifos |
| 2944674 | Ferric ammonium oxalate |
| 2971382 | 2,4-D ester |
| 3012655 | Ammonium citrate, dibasic |
| 3164292 | Ammonium tartrate |
| 3251238 | Cupric nitrate |
| 3486359 | Zinc carbonate |
| 5893663 | Cupric oxalate |
| 5972736 | Ammonium oxalate |
| 6009707 | Ammonium oxalate |
| 6369966 | 2,4,5-T ester |
| 7428480 | Lead stearate |
| 7440235 | Sodium |
| 7446084 | Selenium oxide |
| 7446142 | Lead sulfate |
| 7447394 | Cupric chloride |
| 7558794 | Sodium phosphate, dibasic |
| 7601549 | Sodium phosphate, tribasic |
| 7631892 | Sodium arsenate |
| 7631905 | Sodium bisulfite |
| 7632000 | Sodium nitrite |
| 7645252 | Lead arsenate |
| 7646857 | Zinc chloride |
| 7647010 | Hydrochloric acid |
| 7647189 | Antimony pentachloride |
| 7664382 | Phosphoric acid |
| 7664393 | Hydrofluoric acid |
| 7664417 | Ammonia |

| CAS No. | Common name |
|---------|------------------------|
| 7664939 | Sulfuric acid |
| 7681494 | Sodium fluoride |
| 7681529 | Sodium hypochlorite |
| 7697372 | Nitric acid |
| 7699458 | Zinc bromide |
| 7705080 | Ferric chloride |
| 7718549 | Nickel chloride |
| 7719122 | Phosphorus trichloride |
| 7720787 | Ferrous sulfate |
| 7722647 | Potassium permanganate |
| 7723140 | Phosphorus |
| 7733020 | Zinc sulfate |
| 7758943 | Ferrous chloride |
| 7758954 | Lead chloride |
| 7758987 | Cupric sulfate |
| 7773060 | Ammonium sulfamate |
| 7775113 | Sodium chromate |
| 7778441 | Calcium arsenate |
| 7778509 | Potassium bichromate |
| 7778543 | Calcium hypochlorite |
| 7779864 | Zinc hydrosulfite |
| 7779886 | Zinc nitrate |
| 7782505 | Chlorine |
| 7782630 | Ferrous sulfate |
| 7782823 | Sodium selenite |
| 7782867 | Mercurous nitrate |
| 7783359 | Mercuric sulfate |
| 7783462 | Lead fluoride |
| 7783495 | Zinc fluoride |
| 7783508 | Ferric fluoride |
| 7783564 | Antimony trifluoride |
| 7784341 | Arsenic trichloride |
| 7784409 | Lead arsenate |
| 7784410 | Potassium arsenate |
| 7784465 | Sodium arsenite |
| 7786347 | Mevinphos |
| 7786814 | Nickel sulfate |
| 7787475 | Beryllium chloride |
| 7787497 | Beryllium fluoride |

| CAS No. | Common name |
|----------|----------------------------|
| 7787555 | Beryllium nitrate |
| 7788989 | Ammonium chromate |
| 7789006 | Potassium chromate |
| 7789062 | Strontium chromate |
| 7789095 | Ammonium bichromate |
| 7789426 | Cadmium bromide |
| 7789437 | Cobaltous bromide |
| 7789619 | Antimony tribromide |
| 7790945 | Chlorosulfonic acid |
| 8001352 | Toxaphene |
| 10022705 | Sodium hypochlorite |
| 10025873 | Phosphorus oxychloride |
| 10025919 | Antimony trichloride |
| 10026116 | Zirconium tetrachloride |
| 10028225 | Ferric sulfate |
| 10028247 | Sodium phosphate, dibasic |
| 10039324 | Sodium phosphate, dibasic |
| 10043013 | Aluminum sulfate |
| 10045893 | Ferrous ammonium sulfate |
| 10045940 | Mercuric nitrate |
| 10049055 | Chromous chloride |
| 10099748 | Lead nitrate |
| 10101538 | Chromic sulfate |
| 10101630 | Lead iodide |
| 10101890 | Sodium phosphate, tribasic |
| 10102064 | Uranyl nitrate |
| 10102188 | Sodium selenite |
| 10102440 | Nitrogen dioxide |
| 10102484 | Lead arsenate |
| 10108642 | Cadmium chloride |
| 10124502 | Potassium arsenite |
| 10140655 | Sodium phosphate, dibasic |
| 10192300 | Ammonium bisulfite |
| 10196040 | Ammonium sulfite |
| 10361894 | Sodium phosphate, tribasic |
| 10380297 | Cupric sulfate, ammoniated |
| 10415755 | Mercurous nitrate |
| 10421484 | Ferric nitrate |
| 10588019 | Sodium bichromate |

| CAS No. | Common name |
|----------|---|
| 11115745 | Chromic acid |
| 12002038 | Cupric acetoarsenite |
| 12054487 | Nickel hydroxide |
| 12125018 | Ammonium fluoride |
| 12125029 | Ammonium chloride |
| 12135761 | Ammonium sulfide |
| 12771083 | Sulfur chloride |
| 13597994 | Beryllium nitrate |
| 13746899 | Zirconium nitrate |
| 13765190 | Calcium chromate |
| 13814965 | Lead fluoborate |
| 13826830 | Ammonium fluoborate |
| 13952846 | sec-Butylamine |
| 14017415 | Cobaltous sulfamate |
| 14216752 | Nickel nitrate |
| 14258492 | Ammonium oxalate |
| 14307358 | Lithium chromate |
| 14307438 | Ammonium tartrate |
| 14639975 | Zinc ammonium chloride |
| 14639986 | Zinc ammonium chloride |
| 14644612 | Zirconium sulfate |
| 15699180 | Nickel ammonium sulfate |
| 16721805 | Sodium hydrosulfide |
| 16871719 | Zinc silicofluoride |
| 16919190 | Ammonium silicofluoride |
| 16923958 | Zirconium potassium fluoride |
| 25154545 | Dinitrobenzene |
| 25154556 | Nitrophenol |
| 25155300 | Sodium dodecylbenzenesulfonate |
| 25167822 | Trichlorophenol |
| 25168154 | 2,4,5-T ester |
| 25168267 | 2,4-D ester |
| 26264062 | Calcium dodecylbenzenesulfonate |
| 27176870 | Dodecylbenzenesulfonic acid |
| 27323417 | Triethanolamine dodecylbenzenesulfonate |
| 27774136 | Vanadyl sulfate |
| 28300745 | Antimony potassium tartrate |
| 30525894 | Paraformaldehyde |
| 36478769 | Uranyl nitrate |

| CAS No. | Common name |
|----------|--|
| 37211055 | Nickel chloride |
| 42504461 | Dodecylbenzenesulfonate isopropanolamine |
| 52628258 | Zinc ammonium chloride |
| 52740166 | Calcium arsenite |
| 53467111 | 2,4-D ester |
| 55488874 | Ferric ammonium oxalate |
| 61792072 | 2,4,5-T ester |

[43 FR 10474, Mar. 13, 1978; 43 FR 27533, June 26, 1978, as amended at 44 FR 10268, Feb. 16, 1979; 44 FR 65400, Nov. 13, 1979; 44 FR 66602, Nov. 20, 1979; 54 FR 33482, Aug. 14, 1989; 76 FR 55584, Sept. 8, 2011]