

HAZARDOUS CHEMICALS, CHEMICAL TOXICANTS AND SELECT AGENTS REQUIRING IBC PROTOCOL REGISTRATION

DEFINITION: The hazardous toxicants and toxins which require an approved IBC protocol are now defined as any chemical or toxin which is a: highly toxic, hazardous chemical = LD₅₀ (oral/rat) of ≤50 mg/kg or, if LD₅₀ not available, a GHS rating of 1 or 2 oral, 1 dermal, or 1 inhalation; or HMIS rating of 4. Some of these chemical agents are listed in the chart below. **Note that this is not an all-inclusive list.**

NOTE: Investigational quantities of most standard lab chemicals are now exempt from IBC protocol registration, as described above. However, a complete inventory list of lab chemicals must be recorded in EH&S. The chemical inventory can be accessed online through EH&S at <https://elponline01.elpaso.ttuhs.edu/ehsa/login?reason=logout> ((For any questions on whether a chemical needs registration, please contact Safety Services at 915-215-4820)).

| IBC PROTOCOL REGISTRATION REQUIRED: | CAS Number | Toxicity | Specific Hazard Type |
|---|------------|----------------------------------|----------------------|
| 1,3-Butadiene diepoxide | 1464-53-5 | (78 mg/kg LD50) | toxic, carcinogen |
| 2-(Dimethylamino)ethyl acrylate | 2439-35-2 | GHS 1 inhalation HMIS- Health 4 | toxic |
| 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD-dioxin) | 1746-01-6 | (0.05 mg/kg LD50) | carcinogen |
| 3-acetylpyridine | 350-03-8 | (46 uL/kg LD50) | toxic |
| 4-aminopyridine | 504-24-5 | (21 mg/kg LD50) | toxicant |
| abrin | 1393-62-0 | SELECT AGENT | toxin |
| acrolein | 107-02-8 | (44 mg/kg LD50) | toxicant |
| aconitine | 302-27-2 | (1mg/kg LD50) | toxicant |
| actinomycin D | 50-76-0 | (7.2 mg/kg LD50) | carcinogen |
| alpha-bungarotoxin | 11032-79-4 | (150 ug/kg LD50 Intraperitoneal) | toxic |
| aminopterin | 54-62-6 | (3 mg/kg LD50) | toxicant |
| antimycin A | 1397-94-0 | (28 mg/kg LD50) | toxic |
| arterenol free base | 51-41-2 | (20 mg/kg LD50) | toxicant |
| Atropine | 51-55-8 | GHS 2 Oral | toxic |
| BCNU (carmustine) | 154-93-8 | GHS 2 Oral | toxicant |
| Botulinum neurotoxins | No CAS | SELECT AGENT | toxin |
| butyl methyl ether (TBME) | 1634-04-04 | (4 mg/kg LD50) | toxicant |
| carbamylocholine chloride (carbachol) | 51-83-2 | (40 mg/kg LD50) | toxic |
| carbon fuchsin | 4197-24-4 | (36 mg/kg LD50) | toxicant |
| colchicine | 64-86-8 | (26 mg/kg LD50) | toxicant |

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| "some" or "certain" conotoxins (see CDC.gov for more info) | no CAS | SELECT AGENT | toxin |
| cyanogen bromide | 506-68-3 | GHS 2 Oral | poison, toxic |
| cycloheximide | 66-81-9 | (2 mg/kg LD50) | toxicant |
| cyclopiazonic acid | 18172-33-3 | (36 mg/kg LD50) | toxicant |
| cytochalasin B | 14930-96-2 | (11 mg/kg LD50) | toxicant |
| diacetoxyscirpenol | 2770-40-8 | (7mg/kg LD50) | toxin |
| diisopropyl fluorophosphate | 55-91-4 | (5mg/kg LD50) | toxicant |
| heptachlor | 76-44-8 | (40mg/kg LD50) | carcinogen |
| Hydrofluoric acid | 7664-39-3 | GHS 2 Oral, 1 Dermal | toxic |
| hydrogen cyanide | 74-90-8 | (10 mg/kg LD50) | toxicant, toxic gas, fire hazard |
| Iberiotoxin, recombinant, from Mesobuthus tamulus | 129203-60-7 | | toxin |
| Indomethacin | 53-86-1 | GHS 1 Oral, 2.42 mg/kg | toxic |
| L-(-)-Norepinephrine (+)-bitartrate salt monohydrate | 108341-18-0 | GHS 2 Oral, 1 Inhalation | toxic |
| melphalan | 148-82-3 | (11.2 mg/kg LD50) | toxic |
| mercuric acetate | 1600-27-7 | (40.9 mg/kg LD50) | poison |
| mercuric chloride | 7487-94-7 | (1mg/kg LD50) | carcinogen |
| Methanesulfonyl chloride | 124-63-0 | GHS 2 Oral, 1 Inhalation | toxin |
| mitomycin C | 50-07-7 | (23 mg/kg LD50) | toxin |
| muscimol | 2763-96-4 | (45 mg/kg LD50) | toxicant |
| nicotine | 54-11-5 | (50 mg/kg LD50) | toxicant |
| nitric oxide | 10102-43-9 | (200ppm/1mm LCLO) | explosion hazard |
| N-nitrosomethylvinylamine (24 mg/kg LD50) | 4549-40-0 | (24 mg/kg LD50) | carcinogen |
| N,N-Dimethyl-p-phenylenediamine sulfate salt | 536-47-0 | | toxicant |
| Ouabain octahydrate | 11018-89-6 | GHS 1 Oral | toxicant |
| Osmium tetroxide | 20816-12-0 | "4" HEALTH | Toxin |
| Paraoxon-ethyl (Synonym: Diethyl p-nitrophenyl phosphate) | 311-45-5 | GHS 2 Oral, 1 Inhalation | toxin |
| pentachlorophenol (PCP) | 87-86-5 | (27mg/kg) | toxicant, poison |
| phenyl mercuric acetate (PMA) | 62-38-4 | (22 mg/kg LD50) | toxicant |
| phosphorus (red) | 7723-14-0 | (3 mg/kg LD50) | toxicant |
| phosphorus (white) | 7723-14-0 | (3 mg/kg LD50) | toxicant |
| picrotoxin | 124-87-8 | (15 mg/kg LD50) | toxin |
| potassium cyanide | 151-50-8 | (5 mg/kg LD50) | toxicant |
| potassium dichromate | 7778-50-9 | (25 mg/kg LD50) | poison, carcinogen |
| Ricin | 9009-86-3 | | toxin |
| ricin toxin subunit A | 96638-28-7 | | toxin |
| ricin toxin subunit B | 96638-29-8 | | toxin |
| saxitoxin/STX (0.26 mg/kg LD50) | 35554-08-6, | | toxin |

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| Shiga and Shiga-like toxins (1 and 2) | 35523-89-8 | | toxin |
| sodium arsenite anhydrous | no CAS | | poison, carcinogen |
| sodium azide | 7784-46-5 | (41 mg/kg LD50) | |
| sodium cyanide | 26628-22-8 | (27 mg/kg LD50) | toxicant |
| sodium fluoride | 143-33-9 | (6.64 mg/kg LD50) | toxicant |
| sodium selenite | 7681-49-4 | (31 mg/kg LD50) | toxicant |
| Staphylococcal enterotoxins | 10102-18-8 | (7 mg/kg LD50) | toxicant |
| strychnine | 11100-45-1 | | toxicant |
| strychnine hydrochloride | 57-24-9 | (23.5 mg/kg LD50) | toxicant |
| T-2 toxin | 1421-86-9 | (2 mg/kg LD50) | toxicant |
| tetramethylammonium chloride | 21259-20-1 | (2.7 mg/kg LD50) | toxin |
| tetrodotoxin | 75-57-0 | (50 mg/kg LD50) | poison |
| Thallium(I) nitrate | 4368-28-9 | (10 mg/kg LD50) | toxin |
| Thiophenol | 10102-45-1 | GHS 1 Oral | toxin |
| Valinomycin | 108-98-5 | 46.2 mg/kg | toxic |
| vinorelbine | 2001-95-8 | (4 mg/kg LD50) | toxin |
| vitamin d2 (calciferol) | 125317-39-7 | (26-34 mg/kg LD50) | toxic |
| vitamin d3 (cholecalciferol) | 50-14-6 | (10 mg/kg LD50) | toxic |
| Wortmannin | 67-97-0 | (42 mg/kg LD50) | toxic |
| | 19545-26-7 | (18 mg/kg LD50) | toxicant |

KEY:

All Yellow and several of the Green highlighted agents meet the criterion of ≤ 50 mg/kg LD50 (rat, oral)

- GHS=Globally Harmonized System
- SELECT AGENT = select agents as designated by the CDC/NIH and/or USDA.
 - All SELECT AGENTS are highlighted in Green.
- LD50 values are indicated if current tox data is available
- CDC CHEM AGENT = agents designated by the CDC as potential chemical warfare agents.
- EPA = on the EPA's extremely hazardous substances list.