

## HAZARDOUS TOXICANTS AND TOXINS REQUIRING IBC PROTOCOL REGISTRATION

**INSTRUCTIONS:** When registering a hazardous biological or chemical agent, the IBC Protocol Registration Application form ([http://www.ttuhs.edu/admin/safety/lab/e\\_regform\\_2-08.doc](http://www.ttuhs.edu/admin/safety/lab/e_regform_2-08.doc)) must be completed first. For any chemical toxicant or biotoxin found on this list, **Addendum B** of the IBC Registration must also be completed and submitted for review. Please see the following link for **Addendum B** ([http://www.ttuhs.edu/Admin/safety/lab/e\\_regform\\_7-04\\_B.doc](http://www.ttuhs.edu/Admin/safety/lab/e_regform_7-04_B.doc)).

**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  $\leq 50$  mg/kg. 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 will now be exempt from IBC protocol registration, as described above. However, a complete inventory list of lab chemicals must be submitted to the IBC before any chemical use will be approved. There are no forms to fill out. The inventory can be submitted online through EH&S at <http://www.ttuhs.edu/admin/safety/chemlist> (contact Laboratory Safety in Lubbock for details) or in an Excel file. Entries in the Excel file should be sorted alphabetically and include quantities and CAS numbers if available. Contact Laboratory Safety (806-743-2597) for a template. The file should be named as follows and submitted electronically with the rest of the application:

LastName\_FirstName\_Chemicals\_Year

Hard copies of this inventory may be kept in the lab for documentation and use, but should not be submitted as part of this registration.

**NOTE:** If you are registering for the first time, you should submit a *proposed* chemical inventory for the year.

| IBC PROTOCOL REGISTRATION REQUIRED:                                 | CAS Number | Hazard Classification   | Specific Hazard Type |
|---|------------|-------------------------|----------------------|
| 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD-dioxin) (0.05 mg/kg LD50) | 1746-01-6  | IARC1, NTP              | carcinogen           |
| 3-acetylpyridine (46 uL/kg LD50)                                    | 350-03-8   | "3"HEALTH               | toxic                |
| 4-aminopyridine (21 mg/kg LD50)                                     | 504-24-5   | "4"HEALTH               | toxicant             |
| abrin   | 1393-62-0  | SELECT AGENT, "4"HEALTH | toxin                |

|   |             |   |                                  |
|---|-------------|---|----------------------------------|
| acrolein (44 mg/kg LD50)                              | 107-02-8    | "4" HEALTH                                    | toxicant                         |
| aconitine (1mg/kg LD50)                               | 302-27-2    | "4"HEALTH                                     | toxicant                         |
| actinomycin D (7.2 mg/kg LD50)                        | 50-76-0     | "4"HEALTH                                     | carcinogen                       |
| alpha-bungarotoxin (150 ug/kg LD50 Intraperitoneal)   | 11032-79-4  | Not Published                                 | toxic                            |
| aminopterin (3 mg/kg LD50)                            | 54-62-6     | "4"HEALTH                                     | toxicant                         |
| antimycin A (28 mg/kg LD50)                           | 1397-94-0   | "3"HEALTH                                     | toxic                            |
| arterenol free base (20 mg/kg LD50)                   | 51-41-2     | "4"HEALTH                                     | toxicant                         |
| BCNU (20 mg/kg LD50)                                  | 153-93-8    | "4"HEALTH                                     | toxicant                         |
| butyl methyl ether (TBME) (4 mg/kg LD50)              | 1634-04-04  | "4"HEALTH                                     | toxicant                         |
| carbamylocholine chloride (carbachol) (40 mg/kg LD50) | 51-83-2     | "3"HEALTH                                     | toxic                            |
| carbon fuchsin (36 mg/kg LD50)                        | 4197-24-4   | "4"HEALTH                                     | toxicant                         |
| Clostridium botulinum neurotoxin A                    | 93384-43-1  | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium botulinum neurotoxin B                    | 93384-44-2  | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium botulinum neurotoxin C                    | 93384-45-3  | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium botulinum neurotoxin D                    | 93384-46-4  | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium botulinum neurotoxin E                    | 93384-47-5  | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium botulinum neurotoxin F                    | 107231-15-2 | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium botulinum neurotoxin G                    | 107231-16-3 | SELECT AGENT, "4"HEALTH                       | toxin                            |
| Clostridium perfringens epsilon toxin                 | no CAS      | SELECT AGENT, "4"HEALTH                       | toxin                            |
| cyanogen bromide (25-50 mg/kg I)                      | 506-68-3    | "4"HEALTH                                     | poison, toxic                    |
| cycloheximide (2 mg/kg LD50)                          | 66-81-9     | "4"HEALTH                                     | toxicant                         |
| cyclopiazonic acid (36 mg/kg LD50)                    | 18172-33-3  | "4"HEALTH                                     | toxicant                         |
| cytochalasin B (11 mg/kg LD50)                        | 14930-96-2  | "4"HEALTH                                     | toxicant                         |
| diacetoxyscirpenol (7mg/kg LD50)                      | 2770-40-8   | SELECT AGENT, "4"HEALTH                       | toxin                            |
| diisopropyl fluorophosphate (5mg/kg LD50)             | 55-91-4     | "4"HEALTH                                     | toxicant                         |
| heptachlor (40mg/kg LD50)                             | 76-44-8     | "4"HEALTH, IARC2B                             | carcinogen                       |
| hydrogen cyanide (10 mg/kg LD50)                      | 74-90-8     | "4"HEALTH, "4"FLAMMABILITY,<br>CDC CHEM AGENT | toxicant, toxic gas, fire hazard |
| melphalan (11.2 mg/kg LD50)                           | 148-82-3    | "3" HEALTH                                    | toxic                            |
| mercuric acetate (40.9 mg/kg LD50)                    | 1600-27-7   | "4"HEALTH                                     | poison                           |
| mercuric chloride (1mg/kg LD50)                       | 7487-94-7   | "4"HEALTH                                     | carcinogen                       |
| mitomycin C (23 mg/kg LD50)                           | 50-07-7     | "4"HEALTH                                     | toxin                            |
| muscimol (45 mg/kg LD50)                              | 2763-96-4   | "3"HEALTH                                     | toxicant                         |
| nicotine (50 mg/kg LD50)                              | 54-11-5     | "3"HEALTH, EPA                                | toxicant                         |
| nitric oxide (200ppm/1mm LCLO)                        | 10102-43-9  | "4"HEALTH, OXY                                | explosion hazard                 |

|  |             |                           |                    |
|--|-------------|---------------------------|--------------------|
| <b>N-nitrosomethylvinylamine (24 mg/kg LD50)</b>     | 4549-40-0   | IARC2B, NTP, "4"HEALTH    | carcinogen         |
| <b>omega conotoxin GI</b>                            | 76862-65-2  | SELECT AGENT              | toxin              |
| <b>omega conotoxin GIV</b>                           | 81133-24-6  | SELECT AGENT              | toxin              |
| <b>omega conotoxin GIVA</b>                          | 106375-28-4 | SELECT AGENT              | toxin              |
| <b>omega conotoxin GIIIA</b>                         | 129129-65-3 | SELECT AGENT              | toxin              |
| <b>omega conotoxin MI</b>                            | 83481-45-2  | SELECT AGENT              | toxin              |
| <b>omega conotoxin MVIIA</b>                         | 107452-89-1 | SELECT AGENT              | toxin              |
| <b>omega conotoxin MVIIB</b>                         | no CAS      | SELECT AGENT              | toxin              |
| <b>omega conotoxin MVIIC</b>                         | 147794-23-8 | SELECT AGENT              | toxin              |
| <b>omega conotoxin SIA</b>                           | no CAS      | SELECT AGENT              | toxin              |
| <b>omega conotoxin SVIB</b>                          | no CAS      | SELECT AGENT              | toxin              |
| <b>osmium tetroxide (14 mg/kg LD50)</b>              | 20816-12-0  | "4"HEALTH                 | carcinogen         |
| <b>pentachlorophenol (PCP) (27mg/kg)</b>             | 87-86-5     | IARC2B, "4"HEALTH         | toxicant, poison   |
| <b>phenyl mercuric acetate (PMA) (22 mg/kg LD50)</b> | 62-38-4     | "4"HEALTH                 | toxicant           |
| <b>phosphorus (red) (3 mg/kg LD50)</b>               | 7723-14-0   | "4"HEALTH, CDC CHEM AGENT | toxicant           |
| <b>phosphorus (white) (3 mg/kg LD50)</b>             | 7723-14-0   | "4"HEALTH, CDC CHEM AGENT | toxicant           |
| <b>picrotoxin (15 mg/kg LD50)</b>                    | 124-87-8    | "4"HEALTH                 | toxin              |
| <b>potassium cyanide (5 mg/kg LD50)</b>              | 151-50-8    | "4"HEALTH, CDC CHEM AGENT | toxicant           |
| <b>potassium dichromate (25 mg/kg LD50)</b>          | 7778-50-9   | "4"HEALTH                 | poison, carcinogen |
| <b>ricin toxin subunit A</b>                         | 96638-28-7  | SELECT AGENT, "4"HEALTH   | toxin              |
| <b>ricin toxin subunit B</b>                         | 96638-29-8  | SELECT AGENT, "4"HEALTH   | toxin              |
| <b>saxitoxin/STX (0.26 mg/kg LD50)</b>               | 35554-08-6  | SELECT AGENT, "4"HEALTH   | toxin              |
| <b>Shiga and Shiga-like toxins (1 and 2)</b>         | no CAS      | SELECT AGENT, "4"HEALTH   | toxin              |
| <b>silver nitrate (50 mg/kg LD50)</b>                | 7761-88-8   | "4"HEALTH                 | toxicant           |
| <b>sodium arsenite anhydrous (41 mg/kg LD50)</b>     | 7784-46-5   | "4"HEALTH                 | poison, carcinogen |
| <b>sodium azide (27 mg/kg LD50)</b>                  | 26628-22-8  | "4"HEALTH                 | toxicant           |
| <b>sodium cyanide (6.64 mg/kg LD50)</b>              | 143-33-9    | "4"HEALTH, CDC CHEM AGENT | toxicant           |
| <b>sodium fluoride (31 mg/kg LD50)</b>               | 7681-49-4   | "3"HEALTH                 | toxicant           |
| <b>sodium selenite (7 mg/kg LD50)</b>                | 10102-18-8  | "4"HEALTH                 | toxicant           |
| <b>strychnine (23.5 mg/kg LD50)</b>                  | 57-24-9     | "4"HEALTH, CDC CHEM AGENT | toxicant           |
| <b>T-2 toxin (2.7 mg/kg LD50)</b>                    | 21259-20-1  | SELECT AGENT, "4"HEALTH   | toxin              |
| <b>tetramethylammonium chloride (50 mg/kg LD50)</b>  | 75-57-0     | "4"HEALTH                 | poison             |
| <b>tetrodotoxin (10 mg/kg LD50)</b>                  | 4368-28-9   | SELECT AGENT, "4"HEALTH   | toxin              |
| <b>vinorelbine (26-34 mg/kg LD50)</b>                | 125317-39-7 | "3" HEALTH                | toxic              |
| <b>vitamin d2 (calciferol) (10 mg/kg LD50)</b>       | 50-14-6     | "3"HEALTH                 | toxic              |
| <b>vitamin d3 (cholecalciferol) (42 mg/kg LD50)</b>  | 67-97-0     | "3"HEALTH                 | toxic              |

wortmannin (18 mg/kg LD50)

19545-26-7

"4"HEALTH

toxicant

**KEY:**

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

- All SELECT AGENTS are highlighted in Green.
- LD50 values are indicated if current tox data is available
- “Number Ratings 1-4” of HEALTH, FLAMMABILITY, REACTIVITY, or OXY (Specific Hazard measurements of hazard severity (“4” is most severe) established by the NFPA (National Fire Protection Association) rating symbols.  
IARC1 (UN International Agency for Research on Cancer) = sufficient evidence of carcinogenicity in humans  
IARC2B= limited evidence of carcinogenicity in humans  
NTP (National Toxicology Program) = is known to be or assumed to be a human carcinogen  
SELECT AGENT = select agents as designated by the CDC/NIH and/or USDA.  
CDC CHEM AGENT = agents designated by the CDC as potential chemical warfare agents.  
EPA = on the EPA’s extremely hazardous substances list.