

VA MARYLAND HEALTH CARE SYSTEM

BALTIMORE, MD

RESEARCH AND DEVELOPMENT SERVICE CHEMICAL HYGIENE PLAN

**1. Purpose**

The Chemical Hygiene Plan (CHP) is designed to ensure a safe working environment in all research areas and to assure that chemicals used in research are acquired, stored, used and disposed of in accordance with all applicable local, state and federal regulations.

**2. Policy**

Educate laboratory personnel on the hazards associated with the chemicals and other hazardous materials utilized within the Research and Development (R&D) Service.

Educate laboratory personnel on the appropriate handling and storage of chemicals utilized within the R&D Service.

Educate laboratory personnel on the appropriate disposal of chemicals utilized within the R&D Service.

Investigate incidents of chemical exposure among research personnel to identify causes and develop risk reduction strategies.

**3. Scope**

Laboratory personnel are trained to correctly handle and store hazardous agents through a program emphasizing knowledge of all hazardous agents in the laboratory, the associated risks, the use of material safety data sheets, product labeling, and the periodic monitoring of employee compliance.

**4. Responsibilities**

- a. The ACOS for R&D is responsible for:
  - assuring safe working conditions in all VA research space (on site, approved off-site and leased)
  - coordinating with the VAMHCS Safety Officer, Industrial Hygienist (IH) and Chemical Hygiene Officer (CHO) on chemical inventories and chemical waste disposal.
  - coordinating with the VAMHCS Radiation Safety Officer (RSO) on the safe acquisition of, storage of and disposal of radioactive waste by research laboratories
  - investigating incidents or unsafe conditions regarding chemicals /chemical waste in research studies.
- b. The R&D Committee is responsible for:
  - over-seeing the implementation of the CHP, including acting on the results of inspections and resulting corrective action plans.

- appointing a CHO
- c. The CHO is responsible for:
  - coordinating with principal investigators to ensure that detailed inventories of chemicals are maintained for each laboratory.
  - coordinating with principal investigators, and other supervisory staff to ensure that all employees are trained in the safe handling and disposal of hazardous chemicals utilizing the resources of the VAMHCS Safety Office.
  - coordinating with the IH and principal investigators to ensure that all hazardous chemicals are stored, labeled and disposed of in compliance with all applicable local, state and Federal regulations.
  - ensuring that MSDS for chemicals in use in the research service are posted on the VAMHCS web site.
  - Notifying the R&D Office, IH and Safety Office of reports of unsafe conditions concerning hazardous chemicals and ensuring that prompt corrective action is taken.
- d. The Safety, Occupational Health and Fire Protection Program provides oversight in:
  - the disposal of chemical and radioactive wastes resulting from research studies
  - having a representative on, and reporting to, the Subcommittee on Research Safety (SRS).
  - provision of training of employees on the safe handling and disposal of hazardous chemicals
  - conducting annual inspections of the research laboratories
  - reporting the results of these inspections to the RDC & SRS.
- e. Each Principal Investigator is responsible for:
  - ensuring that chemicals utilized in VA space, are stored and used in a safe manner.
  - ensuring that all chemicals are disposed of in compliance with all applicable local, state and Federal regulations
  - ensuring that all employees under their supervision receive training on the safe handling and disposal of hazardous chemicals
  - assuring that any laboratory worker under their supervision who has a chemical exposure is directed to Occupational Health to receive appropriate immediate treatment
  - reporting any chemical exposures among his/her employees to the R&D office and SRS
  - investigating, along with the IH, any chemical exposures among his/her employees to determine if underlying causes can be corrected
  - correcting deficiencies identified during all inspections.
  - minimizing his/her purchases of hazardous material, re-using chemicals where possible, and sharing chemicals with other investigators when possible. See section 13 on page 8 for waste reduction

## **6. Training and Information**

#### A) Availability

- 1) Copies of the R&D CHP will be available from the CHO and the R&D Administrative Office.
- 2) Training in proper handling of hazardous chemicals will be given by the PI at the time of employment orientation and organized annually by the R&D Service.
- 3) Refresher information and retraining sessions on the aspects of proper handling of hazardous chemicals will be held periodically- no less than annually.

#### B) Background information is available from:

- 1) The Occupational Safety and Health Administration (OSHA) Laboratory Standard and Appendices 29 CFR (1910.1450).
- 2) The permitted exposure limits (P.E.L.) for OSHA regulated chemicals and recommended exposure limits for other hazardous chemicals in use in the R&D Service.
- 3) The R&D Service Safety Plan
- 4) The R&D Service Laboratory Safety Manual
- 5) The R&D Infection Control Plan
- 6) The R&D Laboratory Biohazardous Waste Management Policy
- 7) Material Safety Data Sheets (MSDS)

#### C) Training

- 1) At the time of hiring, training in general aspects of the handling of hazardous chemicals is accomplished by the PI to ensure compliance of the employee with the provisions of the R&D Service Laboratory Safety Manual.
- 2) Training in the appropriate handling of specific hazardous chemicals will be the responsibility of the IH with the assistance of the PI, CHO and members of the SRS, as appropriate. See section 14
- 3) All employees and WOCs are required to take the annual VAMHCS safety training.

## **7. Monitoring**

In the event that regulated chemicals come into use in the R&D Service laboratories, appropriate monitoring will be arranged with the IH in consultation with the Safety Office.

### **8. Medical Surveillance/treatment**

A) Copies of the MSDS for all chemicals are available online on the VAMHCS homepage.

B) Treatment following an incident involving exposure to a hazardous chemical is available through Occupational Health. Follow up treatment will be monitored by Occupational Health.

### **9. Procedures**

A) Standard operating procedures (SOP) for the handling of hazardous chemicals have been established and have to be followed in each applicable laboratory. It is required that each employee familiarize himself/herself with these procedures and that the employee's supervisor ensures compliance.

B) Special Control Measures

1) Special control measures for the use of radioisotopes are detailed in the R&D Service Laboratory Safety Manual in accordance with the Department of Veterans Affairs Hospital Radiation Safety Policy. VAMHCS Policy Memorandum 512-001 IOPS-116.

2) In the event that chemicals requiring special control measures must be used in R&D Service laboratories, the SRS, in conjunction with the IH and PI will determine the control measures to be adopted including:

- a) special training for personnel
- b) establishment of designated areas
- c) containment devices or appropriate personal protective equipment
- d) safe removal procedures
- e) decontamination procedures

1) Containment devices such as Chemical Fume Hoods or Biosafety Cabinets (BSCs) are to be certified annually.

2) Compliance with the R&D Service Safety Plan, Laboratory Safety Manual, Infection Control Policy, and Chemical Hygiene Plan will be evaluated during annual inspections.

## **10. How Chemical Waste is Handled**

Once chemical waste is accumulated and is ready for disposal, the PI fills out a Chemical Waste Form. The Chemical Waste Form shall be completed and submitted to the IH, who will coordinate a waste pickup. Please remember to:

- Completely fill in the form with the required information
- Write out the chemical name or, if the waste is a mixture, the chemicals in the mixture
- Do not use abbreviations or formulas
- Use English
- Be as accurate as possible with quantities and percentages
- Add any other information that is relevant example: associated hazard
- Ensure that the container is in good condition properly closed or sealed
- Ensure that items for removal are organized by compatibility in secondary containers
- Hazardous waste should not be stored near a sink or a floor drain.

## **11. Lab Cleanouts**

Large numbers of unwanted chemicals are found when a PI retires or moves. Clean up and disposal of these chemicals is time consuming and costly to the VA and to the Service. One month before a faculty member or researcher leaves the VA, the individual should contact the GEMS Coordinator, and the IH and arrange for disposal following the SOP for laboratory decommissioning.

## **12. Definition of Hazardous Waste**

Chemicals submitted as Waste are considered hazardous if they meet criteria set forth by the Environmental Protection Agency (EPA) and the Maryland Department of Environment. A waste is considered hazardous if it exhibits any of the characteristics below or if it has been identified as a known hazardous waste and listed on the P or U hazardous waste lists (Appendix B).

### **A. Hazardous Characteristics:**

#### **1) Ignitability**

- Liquids which have a flash point below 140° F (60° C). Examples:

acetone	benzene
ethanol	hexane
xylene	

- Solids capable of causing fire spontaneously, by friction, or by absorption of moisture such as:

sodium metal  
potassium metal

- Flammable compressed gases such as:

butane  
hydrogen

- Oxidizers (which yield oxygen readily). Examples:

chlorates      inorganic peroxides permanganate  
nitrates

## 2) Corrosivity

- Aqueous solutions with a pH less than or equal to 2.0 or greater than or equal to 12.5, such as:

sulfuric acid      sodium hydroxide  
hydrochloric acid      potassium hydroxide  
acetic acid

## 3) Reactivity

- Chemicals that react violently with water or air. Examples:

lithium compounds      potassium metal  
sodium metal      phosphorous metal

Chemicals that contain cyanides or sulfides.

## 4) Toxicity

A chemical solution or waste that fails the Toxicity Characteristic Leaching Procedure (TCLP) test for one or more of the contaminants listed in 40 CFR Part 261.24 is hazardous. The TCLP test is designed to determine the mobility of both organic and inorganic contaminants present in solid or liquid form, when the waste is disposed of. The TCLP procedure identifies certain chemicals that can leach into groundwater supplies if placed in solid waste landfills. If a waste contains any of the contaminants listed in 40 CFR Part 261.24 in a concentration equal to or greater than the value listed, the waste is hazardous.

## DISPOSAL OF CHEMICAL WASTE

### B. Chemicals for the Normal Trash

All chemicals for disposal shall be submitted to the GEMS Coordinator and the IH. If the determination is made that the chemical is not dangerous to the environment or human health, the chemical or material may be disposed of with the normal trash. If the IH has made a previous determination that a specific common chemical may be disposed of in the normal trash, you may be instructed to do so with further accumulation of that chemical. However, if you have not been

given permission to dispose of a certain chemical in the normal trash, it should be turned in to the VAMHCS Safety Office.

### C. Chemicals for the Sanitary Sewer

Any chemical that is poured down the drain eventually flows to the local Publicly Owned Treatment Works (POTW), and then on to Maryland streams, rivers, and the Chesapeake Bay. Sanitary Sewer waste water discharge shall strictly conform to Article 25 of the Baltimore City Code.

Specific prohibitions for sewer disposal are listed below:

- 1.) Pollutants which create a fire or explosion hazard. Solutions containing materials with a flammable or highly reactive hazardous characteristic may not be sewered - this includes, but is not limited to, materials with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade.
- 2.) Pollutants which will cause corrosive structural damage to the POTW. No discharge shall be made of inorganic acids or alkalis having a pH lower than 6.0 or higher than 12.0. No organic acids or bases are allowed to be neutralized and disposed via the drain.
- 3.) Solid or viscous substances in quantities capable of causing obstruction to the flow in the sewer system.
- 4.) Heat in amounts which will inhibit biological activity in the POTW.
- 5.) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference.
- 6.) Pollutants that result in the presence of toxic gases, vapors, or fumes within the POTW.
- 7.) Any material, solid or liquid, that meets the EPA definition of hazardous waste either by exhibiting one or more of the four hazardous characteristics or by falling on either the P or U list for acutely hazardous chemicals.

Exceptions:

Some materials are allowed down the drain in small quantities.

- 1.) Alcohol and water solutions that exhibit a low flash point and, thus, weak ignitability characteristics, may be disposed of down the drain in limited quantities. (< 24% alcohol in water).
- 2.) Soaps or dilute surfactants
- 3.) Some inorganic acids and bases with pH range between 6-12.

Contact the VAMHCS Safety Office for additional guidance for drain disposal. Large quantities of these materials should be submitted to the IH for disposal.

#### D. Mixed Wastes

Increasing numbers of federal regulations control medical, chemical, and low level radioactive waste. Within the research laboratory, hazardous waste is generated that is regulated by more than one governmental agency. The Infection Control Nurse, IH, and Radiation Safety Officer will work with laboratory personnel to reduce the amount of mixed wastes generated.

#### E. Empty containers that once held Hazardous Chemicals

Any empty containers that once held hazardous chemicals can be disposed of in the solid waste stream. One exception: a container that held a P-listed waste (appendix B) must be disposed of as Hazardous Waste through the GEMS Coordinator or Industrial Hygienist.

Pipettes, containers, and other glass material that once held hazardous chemicals and only contain residues of those chemical may be disposed of in the cardboard containers labeled 'Glass Waste'. Other materials that have residues of hazardous chemicals on them may be disposed of in the solid waste containers.

#### F. Labware Contaminated with Regulated Medical Waste

The term "labware" refers to disposable laboratory items such as gloves, benchtop coverings, aprons, and glass flasks. Labware that may be contaminated with regulated medical waste; as described in Regulated Medical Waste Policy shall be disposed of as regulated medical waste. Lab ware that has not been contaminated with medical waste shall be disposed of as solid waste.

. With questions contact the GEMS Coordinator at (410) 642-2411, X-25227, or the Infection Control Coordinator at X57471.

#### F. Batteries

Common "household" type batteries have been recognized as a source of metal pollution in air emissions from community incinerators and in leachate from solid waste landfills. The State of Maryland requires that all batteries be recycled, and the Baltimore VAMHCS has a battery recycling program in place. Batteries used in the laboratory should be disposed of in room 3C-111, for recycling.

Several types of batteries are used in labs. They should be segregated before pick up after consultation with the IH regarding appropriate segregation.

### **13. Waste Reduction Techniques**

#### A. What You Can Do

### 1. Substitution

In some cases, less hazardous or nonhazardous chemicals can be substituted in experimental procedures with no loss of accuracy or precision. Check recent literature for the latest substitutions.

### 2. Order Only What is Needed

The money saved by buying a larger size is grossly offset by the cost of disposing of excess. In addition, larger sizes are more likely to be contaminated before they are completely used up. Take the time to check stock before ordering a new chemical. If there are doubts about the purity of a chemical in stock, call for disposal. Do not leave unwanted chemicals in the lab.

### 3. Share Chemicals

In many cases, a chemical is only needed for a few short experiments. Rather than purchase that chemical, see if another lab will share their chemicals.

### 4. Submit Chemicals to the Surplus Program

Sometimes laboratories close or particular research experiments come to an end. In these instances, many chemicals will no longer be needed. Before submitting the chemicals for disposal, contact the CHO to determine if other labs can use the chemicals.

### 5. Segregate Hazardous from Non-Hazardous Waste

Mixing hazardous and non-hazardous waste will cause the entire mixture to be classified as hazardous. Since the cost of disposal for hazardous waste is many times greater than for non-hazardous waste, this places a burden on the waste program budget and indirectly on research grants. Segregate your waste and save money.

### 6. Segregate Hazardous Wastes by Hazard Class

As seen in previous sections, chemical hazardous waste can be classified into more than one hazard category. Do not mix wastes from more than one hazard class into one container, unless this waste mixture was generated during an experiment. For example, solvents and acids should not be mixed. The best practice is to maintain separate containers for each type of waste generated in the lab. If you have doubts about the types of waste your lab generates or questions about whether certain chemicals can be mixed together, refer to MSDS or call the IH at extension 4014

## **14. Items That Require Special Handling**

### A. Reactive and Potentially Explosive Chemicals

Due to the hazards associated with chemicals in this class, special handling is required by the laboratory and the Safety Office. When calling for the disposal of any of the following chemicals, be sure to specify the hazard to ensure that appropriate precautions can be taken.

**B. Potentially Explosive Compounds** (See R&D Policy for Management of Reactive and Explosive Hazardous Chemicals)

Examples:

azides	hydrazine compounds
peroxide forming compounds	nitrocellulose (dry)
diazo compounds	picric acid (dry and crystallized) (See R&D Policy for Use of Picric Acid)
fulminates	strong oxidizing/reducing agents
water reactive compounds	

**C. Peroxide Forming Compounds**

Sensitive to light and heat, this class of compounds react with air and light to form unstable peroxides. When opening containers of peroxide forming solvents, check for crystal formation that may indicate the presence of peroxides. Do not open any container that has crystals around the cap or has a fritted glass top or metal cap that may cause sparks. Peroxides are shock and heat sensitive.

Peroxide forming solvents containers must be dated when chemicals are received in the lab. Containers must be dated again at the time of opening. Please consult VA Research Service "Management of Reactive and Explosive Hazardous Chemicals" SOP for list of peroxide forming solvents and allowed shelf life.

Never distill peroxide forming solvents unless they have been tested and are known to be free of peroxide. Peroxides concentrated in the pot residue can pose a serious explosion hazard.

Tests for peroxides are easily done. Fast and inexpensive indicating strips are commercially available. Solvents found to contain peroxides can be treated. Removal of the peroxide is usually done by the addition of a reducing agent, ferrous sulfate or sodium metabisulfite. Details of this procedure are available from the Safety Office.

Examples of peroxide forming solvents:

(See R&D Policy "Management of Reactive and Explosive Hazardous Chemicals")

diethyl ether	tetrahydrofuran
isopropyl ether	dioxanes
ethyl ether	

**D. Strong Oxidizing/Reducing Agents**

This class of chemicals causes severe reactions when mixed with incompatible materials including violent polymerization with generation of heat, production of unstable or pyrophoric

compounds, and production of flammable gases. Fire can also result. Some of these chemicals are:

#### **Oxidizing Agents**

chromic acid (fresh)  
metallic chlorates  
metallic nitrates  
metallic perchlorates  
stannous chloride

#### **Reducing Agents**

n-butyl lithium  
metallic sulfides  
calcium hydride  
sodium hydride

perchloric acid (See R&D Policy for Use of Perchloric Acid- Appendix F)

#### **E. Other Reactive Chemicals**

This group of chemicals contains all the other reactive/explosive chemicals including water reactives, sulfides, and cyanide compounds. Cyanides and sulfides should be kept away from acids. When calling for a pickup, always inform the IH of the presence of these chemicals:

acetyl chloride  
phosphorous (yellow)  
benzoylperoxide  
potassium metal  
bromine

sodium metal  
calcium metal  
thionyl chloride  
lithium metal  
cyanide and sulfide containing  
compounds

#### **F. Unknown Chemicals**

Unknown chemicals present a serious problem. Without a label or description, chemicals cannot be handled or disposed of safely. Disposal companies will not accept unlabeled chemical waste. The characterization and analysis of these containers are costly.

#### **G. Dating Containers of Chemicals**

Good housekeeping practices are the best way of maintaining a stock of fresh uncontaminated chemicals for laboratory use. It is good practice to date chemical containers at the time when they are received in the laboratory and again when they are first opened. If the contents of a chemical container are expired or look suspicious, discard through the chemical waste program.

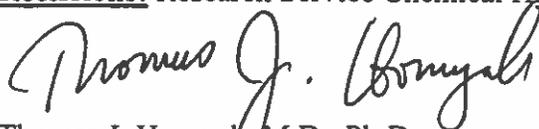
**This plan is due for review and approval on/ before the last working day of April, 2022.**

#### **Attachments:**

Appendix A

Appendix B

**Revisions:** Research Service Chemical Hygiene Plan, November 2015

A handwritten signature in black ink, reading "Thomas J. Hornyak". The signature is written in a cursive style with a large, prominent initial 'T'.

Thomas J. Hornyak, M.D., Ph.D.  
ACOS for Research & Development

## Appendix A

### Chemical Spill Information Sheet

#### Notes and Precautions:

The range and quantity of hazardous substances used in laboratories require preplanning in order for safety and emergency personnel to respond safely to chemical spills. Spill kits with instructions, adsorbents, reactants, and protective equipment should be available to clean up minor spills. A minor chemical spill (less than one liter of a moderately hazardous substance) is one that the laboratory staff is capable of handling safely without the use of respiratory protection or the assistance of safety and emergency personnel. All other chemical spills are considered major.

**The cleanup of a chemical spill should only be performed by knowledgeable and experienced personnel. The Safety, Occupational Health and Fire Protection Office is equipped to handle most spills that occur at the Baltimore VAMC. If there is the slightest doubt as to how to proceed, do not hesitate to call for assistance:**

#### Emergency Response (56999)

**Main Engineering Office, ext. 57020 (8:00 - 4:30 PM)**

**After Hours - Medical Administrative Assistant/Medical On Duty (ext. 55144/57316 or 56999)**

#### Minor Chemical Spill

In the Event of a Minor Spill:

- Spill kits are available in rooms 3C-101, 3C-111, and 3C-127.
- Alert people in immediate area of spill
- Wear protective equipment, including safety goggles or face shield, gloves, and long-sleeved labcoat.
- Avoid breathing vapors from spill. Increase area ventilation by turning on hoods.
- Confine spill to small area with absorbent materials.
- Use the appropriate kit. Collect residue, place in container, label container and call the IH (4014) for disposal information.
- Clean spill area with soap and water.

### Major Chemical Spill or Spill of an Extremely Hazardous Substance

Some spills are larger (> 1 liter) or involve very hazardous or unknown substances. **Only safety and emergency personnel should clean them up.** Examples of very hazardous substances include: Class IA flammable solvents. In the event of a major spill:

- Immediately call the Safety Office/Engineering Service or the MAA as outlined above.
- Attend to injured or contaminated persons and remove them from exposure. In case of personal contamination, remove affected clothing and flush contaminated skin with water for at least fifteen minutes. Seek medical attention immediately.
- Alert people in the surrounding area to evacuate.
- If **there is no health or safety risk**, turn off ignition and heat sources. Maintain fume hood ventilation to increase ventilation.
- Close doors to affected area once the area is evacuated.
- Have someone knowledgeable of the incident and the laboratory to assist emergency personnel upon arrival.

Occupational Health  
Security

ext. 54323  
ext. 57300/56999 or the operator

### Mercury Spill Kit

- Call Industrial Hygienist at ext. 54014 for cleanup.

## Appendix B

## Acute Hazardous Waste

P023	Acetaldehyde, chloro-	P045	2-Butanone, 3, 3-dimethyl-1-(methylthio)-, O-t(methylamino) carbonyl] oxime
P002	Acetamide, N-(aminothioxomethyl)-	P021	Calcium cyanide Ca(CN) <sub>2</sub>
P057	Acetamide, 2-fluoro-	P022	Carbon disulfide
P058	Acetic acid, fluoro-, sodium salt	P095	Carbonic dichloride
P002	1-Acetyl-2-thiourea	P023	Chloroacetaldehyde
P003	Acrolein	P024	p-Chloroaniline
P070	Aldicarb	P026	1-(o-chlorophenyl)thiourea
P004	Aldrin	P027	3-Chloropropionitrile
P005	Allyl alcohol	P029	Copper cyanide Cu(CN) <sub>2</sub>
P006	Aluminum phosphide	P030	Cyanides (soluble cyanide salts), not otherwise specified
P007	5-(Aminomethyl)-3-isoxazolol	P031	Cyanogen
P008	4-Aminopyridine	P033	Cyanogen chloride
P009	Ammonium picrate	P034	Cyanogen chloride (CN)Cl
P119	Ammonium vanadate		2-Cyclohexyl-4, 6-dinitrophenol
P099	Argentate(I-), bis(cyano-C)-, potassium	P016	Dichloromethyl ether
P010	Arsenic acid (H <sub>3</sub> AsO <sub>4</sub> )	P036	Dichlorophenylarsine
P012	Arsenic oxide (As <sub>2</sub> O <sub>3</sub> )	P037	Dieldrin
P011	Arsenic oxide (As <sub>2</sub> O <sub>5</sub> )	P038	Diethylarsine
P011	Arsenic pentoxide	P041	Diethyl-p-nitrophenyl phosphate
P012	Arsenic trioxide	P040	O,O-Diethyl O-pyrazinylphosphorothioate
P038	Arsine, diethyl-	P043	Diisopropyl fluorophosphate (DFP)
P036	Arsonous dichloride, phenyl-	P004	1, 4, 5, 8-Dimethanonaphthalene, 1, 2, 3, 4, 10, 10-hexa-chloro-1, 4, 4a, 5, 8, 8a, hexahydro-, (1 alpha, 4 alpha, 4abeta, 5alpha, 8alpha, 8abeta)-
P054	Aziridine	P060	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)-
P067	Aziridine, 2-methyl-	P037	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-, (1alpha, 2beta, 2alpha, 3beta, 6beta, 6alpha, 7beta, 7alpha)-
P013	Barium cyanide	P051	2, 7:3, 6-Dimethanonaphth[2, 3-b]oxirene, 3, 4, 5, 6, 9, 9-hexachloro-1a, 2, 2a, 3, 6, 6a, 7, 7a-
P024	Benzenamine, 4-chloro-		
P077	Benzenamine, 4-nitro-		
P028	Benzene, (chloromethyl)-		
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino) ethyl]-		
P046	Benzeneethanamine, alpha, alpha-dimethyl		
P014	Benzenethiol		
POOi	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, and salts, when present at concentrations greater than 0.3%		
P028	Benzyl chloride		
POIS	Beryllium		
P017	Bromoacetone		
P018	Brucine		

	octahydro-, (1alpha, 2beta, 2abeta, 3alpha, 6alpha, 6abeta, 7beta, 7alpha)- and metabolites	P059	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptchloro-3a,4,7,7a-tetrahydro
P044	Dimethoate	P066	Methomyl
P046	alpha, alpha-Dimethylphenethylamine	P068	Methyl hydrazine
P047	4,6-Dinitro-o-cresol and salts	P064	Methyl isocyanate
P048	2,4-Dinitrophenol	P069	2-Methylactonitrile
P020	Dinoseb	P071	Methyl parathion
P085	Diphosphoramidate, octamethyl-	P072	alpha-Naphthylthiourea
P111	Diphosphoric acid, tetraethyl ester	P073	Nickel carbonyl
P039	Disulfoton	P073	Nickel carbonyl Ni(CO) <sub>4</sub> , (T-4)
P049	2,4-Dithiobiuret	P074	Nickel cyanide
P050	Endosulfan	P074	Nickel cyanide Ni(CN) <sub>2</sub>
P088	Endothall	P075	Nicotine and salts
P051	Endrin	P076	Nitric oxide
P051	Endrin, and metabolites	P077	p-Nitroaniline
P042	Epinephrine	P078	Nitrogen dioxide
P031	Ethanedinitrile	P076	Nitrogen oxide NO
P066	Ethanimidothioic acid, N-[[[(methyl amino)carbonyl]oxy]-, methyl ester	P078	Nitrogen oxide NO <sub>2</sub>
P101	Ethyl cyanide	P081	Nitroglycerine
054	Ethylenimine	P082	N-Nitrosodimethylamine
P097	Famphur	P084	N-Nitrosomethylvinylamine
P056	Fluorine	P085	Octamethylpyrophosphoramidate
P057	Fluoroacetamide	P087	Osmium oxide OsO <sub>4</sub>
P058	Fluoroacetic acid, sodium salt	P087	Osmium tetroxide
P065	Fulminic acid, mercury (2+) salt	P088	7-Oxabicyclo(2.2.1)heptane-2,3-dicarboxylic acid
P059	Heptachlor	P089	Parathion
P062	Hexaethyl tetraphosphate	P034	Phenol, 2-cyclohexyl-4,6-dinitro-
P116	Hydrazinecarbothioamide	P048	Phenol, 2,4-dinitro-
P068	Hydrazine, methyl-	P047	Phenol, 2-methyl-4,6-dinitro-, and salts
P063	Hydrocyanic acid	P020	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P063	Hydrogen cyanide	P009	Phenol, 2,4,6-trinitro-, ammonium salt
P096	Hydrogen phosphide	P092	Phenylmercury acetate
P060	Isodrin	P093	Phenylthiourea
P007	3(2H)-Isoxazolone, 5-(aminomethyl)-	P094	Phorate
P092	Mercury, (acetato-O)phenyl-	P095	Phosgene
P065	Mercury fulminate	P096	Phosphine
P082	Methanamine, N-methyl-N-nitroso	P041	Phosphoric acid, diethyl 4-nitrophenyl ester
P064	Methane, isocyanato	P039	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P016	Methane, oxybis[chloro	P094	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P112	Methane, tetranitro	P044	Phosphorodithioic acid, O,O-dimeth
P118	Methanethiol, trichloro		
P050	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro, 3-oxide		

	yl S-[2-methylamino)-2-oxoethyl] ester	P108	Strychnine and salts
P043	Phosphorofluoridic acid, bis(1-methylethyl)ester	P115	Sulfuric acid, thallium(1 +) salt
P089	Phosphorothioic acid, O,O-diethyl 0-	P109	Tetraethyldithiopyrophosphate
	(p-nitrophenyl) ester	PI10	Tetraethyl lead
P040	Phosphorothioic acid, O,O-diethyl 0-	PI11	Tetraethyl pyrophosphate
	pyrazinyl ester	PI 12	Tetranitromethane
P097	Phosphorothioic acid, 0-[4-[(dimethyl amino)sulfonyl]phenyl] O,O-dimethyl ester	P062	Tetraphosphoric acid, hexaethyl ester
P071	Phosphorothioic acid, O,O,-dimethyl 0-(4-nitrophenyl) ester	PI 13	Thallic oxide
P110	Plumbane, tetraethyl-	P113	Thallium oxide Tl <sub>2</sub> O <sub>3</sub>
P098	Potassium cyanide K(CN)	PI 14	Thallium(I) selenite
P099	Potassium silver cyanide	PI 15	Thallium(I) sulfate
P070	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino)carbonyl]oxime	P109	Thiodiphosphoric acid, tetraethyl ester
PI01	Propanenitrile	P045	Thiofanox
P027	Propanenitrile, 3-chloro-	P049	Thioimidocarbonic diamide [(H <sub>2</sub> N)C(S)] <sub>2</sub> NH
P069	Propanenitrile, 2-hydroxy-2-methyl-	P014	Thiophenol
P081	1,2,3-Propanetriol, trinitrate-	P116	Thiosemicarbazide
P017	2-Propanone, 1-bromo-	P026	Thiourea, (2-chlorophenyl)-
P102	Propargyl alcohol	P072	Thiourea, 1-naphthalenyl-
P003	2-Propenal	P093	Thiourea, phenyl-
P005	2-Propen-1-ol	P123	Toxaphene
P067	1,2-Propylenimine	PI 18	Trichloromethanethiol
P102	2-Propyn-1-ol	P119	Vanadic acid, ammonium salt
P008	4-Pyridinamine	P120	Vanadium pentoxide V <sub>2</sub> O <sub>5</sub>
P075	Pyridine, 3-(1-methyl-2-pyrroldinyl)-(S)-, and salts	P120	Vanadium pentoxide
P114	Selenious acid, dithallium(1 +) salt	P084	Vinylamine, N-methyl-N-nitroso-
P103	Selenourea	P001	Warfarin and salts, when present at concentrations greater than 0.3%
P104	Silver cyanide Ag(CN)	P121	Zinc cyanide Zn(CN) <sub>2</sub>
P105	Sodium azide	P122	Zinc phosphide Zn <sub>3</sub> P <sub>2</sub> , when present at concentrations greater than 10
P106	Sodium cyanide Na(CN)		
P107	Strontium sulfide SrS		
P108	Strychnidin-10-one, and salts		
P018	Strychnidin-10-one, 2,3-dimethoxy-		

**Known Corrosive or Ignitable Hazardous Waste**

U001 Acetaldehyde  
U034 Acetaldehyde, trichloro-  
U187 Acetamide, N-(4-ethoxyphenyl)-  
U005 Acetamide, N-9H-fluoren-2-yl-  
U240 Acetic acid,(2,4-dichlorophenoxy)-,  
salts and esters  
U1 12 Acetic acid, ethyl ester  
U144 Acetic acid, lead(2+) salt  
U214 Acetic acid, thallium(1 +) salt  
F027 Acetic acid,(2,4,5-trichlorophenoxy)  
U002 Acetone  
U003 Acetonitrile  
U004 Acetophenone  
U005 2-Acetylaminofluorene  
U006 Acetyl chloride  
U007 Acrylamide  
U008 Acrylic acid  
U009 Acrylonitrile  
U011 Amitrole  
U012 Aniline  
U136 Arsinic acid, dimethyl-  
U014 Auramine  
U015 Azaserine  
U010 Azirino(2',3':3,4)pyrrolo(1,2- a)indole-  
4,7-dione,6-amino-8-  
[[[(aminocarbonyl)oxy] methyl]],  
1a,2,8,8a,8b-hexahydro-8a-methoxy-  
5-methyl-,[1 aS-( 1 aalpha, 8beta,  
8aalpha, 8balpha)]-  
U1 57 Benz[j]aceanthrylene, 1,2-dihydro-3-  
methyl-  
U016 Benz[c]acridine  
U01 7 Benzal chloride  
U192 Benzamide, 3,5-dichloro-N-(1,1-  
dimethyl-2-propynyl)-  
U018 Benz[a]anthracene  
U094 Benz[a]nthalene, 7,12-dimethyl-  
U012 Benzenamine  
U014 Benzenamine, 4,4'-carbonimidoyl-

bis[N,N-dimethyl-  
U049 Benzenamine, 4-chloro-2-methyl-,  
hydrochloride  
U093 Benzenamine, N,N'-dimethyl-4-  
phenylazo-  
U328 Benzenamine, 2-methyl-  
U353 Benzenamine, 4-methyl-  
U158 Benzenamine, 4,4'-methylenebis(2-  
chloro)-  
U222 Benzenamine, 2-methyl-,  
hydrochloride  
U181 Benzenamine, 2-methyl-5-nitro  
U019 Benzene  
U038 Benzeneacetic acid, 4-chloro-alpha-  
(4-chlorophenyl-alpha-hydroxy-,  
ethyl ester  
U030 Benzene, 1-bromo-4-phenoxy-  
U035 Benzebutanoic acid, 4-[bis(2-  
chloroethyl)amino]-  
U037 Benzene, chloro-  
U221 Benzenediamine, ar-methyl-  
U028 1,2-Benzenedicarboxylic acid, bis(2-  
ethyl-hexyl) ester  
U069 1,2-Benzenedicarboxylic acid, dibutyl  
ester  
U088 1,2-Benzenedicarboxylic acid, diethyl  
ester  
U102 1,2-Benzenedicarboxylic acid,  
dimethyl ester  
U107 1,2-Benzenedicarboxylic acid, dioctyl  
ester  
U070 Benzene, 1,2-dichloro-  
U071 Benzene, 1,3-dichloro-  
U072 Benzene, 1,4-dichloro-  
U060 Benzene, 1,1'-(2,2dichloroethylidene  
-bis[4-chloro-  
U017 Benzene, (dichloromethyl)  
U223 Benzene, 1,3-diisocyanatomethyl-  
U239 Benzene, dimethyl  
U201 1,3-Benzenediol  
U127 Benzene, hexachloro-  
U056 Benzene, hexahydro-

U220 Benzene, methyl-  
UI 05 Benzene, 1-methyl-2,4-dinitro-  
UI 06 Benzene, 2-methyl-1,3-dinitro-  
U055 Benzene, (1-methylethyl)-  
UI 69 Benzene, nitro-  
UI 83 Benzene, pentachloro-  
UI 85 Benzene, pentachloronitro-  
U020 Benzenesulfonic acid chloride  
U020 Benzenesulfonyl chloride  
U207 Benzene, 1,2,4,5-tetrachloro-  
U061 Benzene, 1,1'-(2,2,2-trichloro  
ethylidene)bis[4-chloro-  
U247 Benzene, 1,1'-(2,2,2-trichloro  
ethylidene)bis[4-methoxy-  
U023 Benzene, (trichloromethyl)-  
U234 Benzene, 1,3,5-trinitro-  
U021 Benzidine  
U202 1,2-Benzisothiazol-3(2H)-one, 1,1-  
dioxide, and salts  
U203 1,3-Benzodioxole, 5-(2-propenyl)-  
UI 41 1,3-Benzodioxole, 5-(1-propenyl)-  
U090 1,3-Benzodioxole, 5-propyl-  
U064 Benzo[*rst*]pentaphene  
U248 2H-1-Benzopyran-2-one, 4-hydroxy-  
3-(3-oxo-1-phenyl-butyl)-, and salts,  
when present at concentrations of  
0.3% or less  
U022 Benzo[*a*]pyrene  
UI 97 p-Benzoquinone  
U023 Benzotrichloride  
U085 2,2'-Bioxirane  
U021 [1,1'-Biphenyl]-4,4'-diamine  
U073 [1,1'-Biphenyl]-4,4'-diamine, 3,3'-  
dichloro-  
U091 [1,1'-Biphenyl]-4,4'-diamine,3,3'-  
dimethoxy-  
U095 [1,1'-Biphenyl]-4,4'-diamine,3,3'-  
dimethyl-  
U225 Bromoform  
U030 4-Bromophenyl phenyl ether  
U128 1,3-Butadiene, 1,1,2,3,4,4-  
hexachloro-

UI 72 1-Butanamine, N-butyl-N-nitroso-  
U031 1-Butanol  
U159 2-Butanone  
U160 2-Butanone peroxide  
U053 2-Butenal  
U074 2-Butene, 1,4-dichloro-  
U143 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-[1 alpha(Z),7(2S\*,3R\*),  
7a alpha]]  
U031 n-Butyl alcohol  
U136 Cacodylic acid  
U032 Calcium chromate  
U238 Carbamic acid, ethyl ester  
UI 78 Carbamic acid, methylnitroso-, ethyl  
ester  
U097 Carbamic chloride, dimethyl-  
UI 14 Carbamodithioic acid, 1,2-ethanediy  
bis-, salts and esters  
U062 Carbamodithioic acid, bis(1-methyl  
ethyl)-,S-(2,3-dichloro-2-propenyl)  
ester  
U215 Carbonic acid, dithallium(1 +) salt  
U033 Carbonic difluoride  
U156 Carbonochloridic acid, methyl ester  
U033 Carbon oxyfluoride  
U211 Carbon tetrachloride  
U034 Chloral  
U035 Chlorambucil  
U036 Chlordane, alpha and gamma isomers  
U026 Chlomaphazin  
U037 Chlorobenzene  
U038 Chlorobenzilate  
U039 4-Chloro-m-cresol  
U042 2-Chloroethyl vinyl ether  
U044 Chloroform  
U046 Chloromethyl methyl ether  
U047 beta-Chloronaphthalene  
U048 o-Chlorophenol  
U049 4-Chloro-o-toluidine, hydrochloride

U032 Chromic acid H<sub>2</sub>CrO<sub>4</sub>, calcium salt  
U050 Chrysene  
U051 Creosote  
U052 Cresol (Cresylic acid)  
U053 Crotonaldehyde  
U055 Cumene  
U246 Cyanogen Bromide (CN)Br  
U197 2,5-Cyclohexadiene-1,4-dione  
U056 Cyclohexane  
U129 Cyclohexane, 1,2,3,4,5,6-hexa  
chloro-, (1alpha,2alpha,3beta,4alpha,  
5alpha,6beta)-  
U057 Cyclohexanone  
U130 1,3-Cyclopentadiene, 1,2,3,4,5,5-  
hexachloro-  
U058 Cyclophosphamide  
U240 2,4,-D, salts and esters  
U059 Daunomycin  
U060 DDD  
U061 DDT  
U062 Diallylate  
U063 Dibenzo[a,i]anthracene  
U064 Dibenzo,[i]pyrene  
U066 1,2-Dibromo-3-chloropropane  
U069 Dibutyl phthalate  
U070 o-Dichlorobenzene  
U071 m-Dichlorobenzene  
U072 p-Dichlorobenzene  
U073 3,3'-Dichlorobenzidine  
U074 1,4-Dichloro-2-butene  
U075 Dichlorodifluoromethane  
U078 1,1-Dichloroethylene  
U079 1,2-Dichloroethylene  
U025 Dichloroethyl ether  
U027 Dichloroisopropyl ether  
U024 Dichloromethoxy ethane  
U081 2,4-Dichlorophenol  
U082 2,6-Dichlorophenol  
U084 1,3-Dichloropropene  
U085 1,2:3,4-Diepoxbutane  
U108 1,4-Diethyleneoxide  
U028 Diethylhexyl phthalate

U086 N,N'-Diethylhydrazine  
U087 O,O-Diethyl S-methyl dithiophosphate  
U088 Diethyl phthalate  
U089 Diethylstilbesterol  
U090 Dihydrosafrole  
U091 3,3'-Dimethoxybenzidine  
U092 Dimethylamine  
U093 p-Dimethylaminoazobenzene  
U094 7,12-Dimethylbenz[a]anthracene  
U095 3,3'-Dimethylbenzidine  
U096 alpha, alpha-Dimethylbenzylhydroperoxide  
U097 Dimethylcarbonyl chloride  
U098 1,1-Dimethylhydrazine  
U099 1,2-Dimethylhydrazine  
U101 2,4-Dimethylphenol  
U102 Dimethyl phthalate  
U103 Dimethyl sulfate  
U105 2,4-Dinitrotoluene  
U106 2,6-Dinitrotoluene  
U107 Di-n-octyl phthalate  
U108 1,4-Dioxane  
U109 1,2-Diphenylhydrazine  
U110 Dipropylamine  
U111 Di-n-propylnitrosamine  
U041 Epichlorohydrin  
U001 Ethanal  
U174 Ethanamine, N-ethyl-N-nitroso-  
U155 1,2-Ethandiamine, N,N-Dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-  
U067 Ethane, 1,2-dibromo-  
U076 Ethane, 1,1-dichloro-  
U077 Ethane, 1,2-dichloro-  
U131 Ethane, hexachloro-  
U024 Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-  
U117 Ethane, 1,1'-oxybis-  
U025 Ethane, 1,1'-oxybis[2-chloro-  
U184 Ethane, pentachloro-  
U208 Ethane, 1,1,1,2-tetrachloro-  
U209 Ethane, 1,1,2,2-tetrachloro-

U218 Ethanethioamide  
U226 Ethane, 1,1,1-trichloro-  
U227 Ethane, 1, 1,2-trichloro-  
U359 Ethanol, 2-ethoxy-  
U1 73 Ethanol, 2,2'-(nitrosoimino)bis-  
U004 Ethanone, 1-phenyl-  
U043 Ethene, chloro-  
U042 Ethene, (2-chloroethoxy)-  
U078 Ethene, 1,1-dichloro-  
U079 Ethene, 1,2-dichloro-  
U210 Ethene, tetrachloro-  
U228 Ethene, trichloro-  
U112 Ethyl acetate  
U1 13 Ethyl acrylate  
U238 Ethyl carbamate (urethane)  
U1 17 Ethyl ether  
U1 14 Ethylenebisdithiocarbamic acid, salts  
and esters  
U067 Ethylene dibromide  
U077 Ethylene dichloride  
U359 Ethylene glycol monoethyl ether  
U1 15 Ethylene oxide  
U1 16 Ethylenethiourea  
U076 Ethylidene dichloride  
U1 18 Ethyl methacrylate  
U1 19 Ethyl methanesulfonate  
U120 Fluoranthene  
U122 Formaldehyde  
U123 Formic acid  
U124 Furan  
U125 Furancarboxaldehyde  
U147 2,5-Furandione  
U213 Furan, tetrahydro-  
U125 Furfural  
U124 Furfuran  
U206 Glucopyranose, 2-deoxy-2-(3-methyl  
-3-nitrosoureido)-, D-  
U206 D-Glucose, 2-deoxy-2-[[methyl  
nitrosoamino)-carbonyl]amino]-  
U1 26 Glycidylaldehyde  
U163 Guanidine, N-methyl-N'-nitro-N-  
nitroso-

U127 Hexachlorobenzene  
U128 Hexachlorobutadiene  
U130 Hexachlorocyclopentadiene  
U131 Hexachloroethane  
U132 Hexachlorophene  
U243 Hexachloropropene  
U133 Hydrazine  
U086 Hydrazine, 1,2-diethyl-  
U098 Hydrazine, 1,1-dimethyl-  
U099 Hydrazine, 1,2-dimethyl-  
U109 Hydrazine, 1,2-diphenyl-  
U1 34 Hydrofluoric acid  
U134 Hydrogen fluoride  
U135 Hydrogen sulfide  
U135 Hydrogen sulfide, H<sub>2</sub>S  
U096 Hydroperoxide, 1-methyl-1-phenyl  
ethyl-  
U1 16 2-Imidazolidinethione  
U137 Indeno[1,2,3-cd]pyrene  
U190 1,3-Isobenzofurandione  
U140 Isobutyl alcohol  
U141 Isosafrole  
U142 Kepone  
U143 Lasiocarpine  
U144 Lead acetate  
U146 Lead, bis(aceto-O)tetrahydroxytri-  
U145 Lead phosphate  
U146 Lead subacetate  
U129 Lindane  
U163 MNNG  
U147 Maleic anhydride  
U148 Maleic hydrazine  
U149 Malononitrile  
U150 Melphalan  
U1 51 Mercury  
U1 52 Methacrylonitrile  
U092 Methanamine, N-methyl-  
U029 Methane, bromo-  
U045 Methane, chloro-  
U046 Methane, chloromethoxy-  
U068 Methane, dibromo-  
U080 Methane, dichloro-

U075 Methane, dichlorodifluoro-  
U138 Methane, iodo-  
U1 19 Methanesulfonic acid, ethyl ester  
U211 Methane, tetrachloro-  
U153 Methanethiol  
U225 Methane, tribromo-  
U044 Methane, trichloro-  
U121 Methane, trichlorofluoro-  
U036 4,7-Methano-1H-indene-1,2,4,5,  
6,7,8,8-octachloro-2,3,3a,4,7,7a-  
hexahydro-  
U036 Methanol  
U1 55 Methapyrilene  
U142 1,3,4-Metheno-2H-cyclobuta[cd]  
pentalen-2-one, 1,1a,3,3a,4,5,5.5a,  
5b,6decachloroocta-hydro-  
U247 Methoxychlor  
U154 Methyl alcohol  
U029 Methyl bromide  
U186 1-Methylbutadiene  
U045 Methyl chloride  
U156 Methyl chlorocarbonate  
U226 Methyl chloroform  
U157 3-Methylcholanthrene  
U1 58 4,4'-Methylenebis(2-chloroaniline)  
U068 Methylene bromide  
U080 Methylene chloride  
U159 Methyl ethyl ketone (MEK)  
U160 Methyl ethyl ketone peroxide  
U138 Methyl iodide  
U161 Methyl isobutyl ketone  
U1 62 Methyl methacrylate  
U161 4-Methyl-2-pentanone  
U164 Methylthiouracil  
U010 Mitomycin C  
U059 5,12-Naphthacenedione, 8-acetyl-10-  
[(3-amino-2,3,6-trideoxy)-alpha-L-  
lyxohexopyrano-syl)oxy]-7,8,9, 10-  
tetrahydro-6,8,11-trihydroxy- 1-  
methoxy-, (8S-cis)-  
U1 67 1-Naphthalenamine  
U1 68 2-Naphthalenamine

U026 Naphthalenamine, N,N'-bis(2-chloro ethyl)-  
U165 Naphthalene  
U047 Naphthalene, 2-chloro  
U166 1,4-Naphthalenedione  
U236 2,7-Naphthalenedisulfonic acid, 3,3'-  
[(3,3'-dimethyl[1,1'-biphenyl]-4,4'  
diyl)bis(azo)bis[5-amino-4 hydroxyl]  
-tetrasodium salt  
U166 1,4-Naphthoquinone  
U167 alpha-Naphthylamine  
U1 68 beta-Naphthylamine  
U217 Nitric acid, thalliumC1 +) salt  
U169 Nitrobenzene  
U1 70 p-Nitrophenol  
U1 71 2-Nitropropane  
U1 72 N-Nitrosodi-n-butylamine  
U1 73 N-Nitrosodiethanolamine  
U1 74 N-Nitrosodiethylamine  
U1 76 N-Nitroso-N-ethylurea  
U1 77 N-Nitroso-N-methylurea  
U1 78 N-Nitroso-N-methylurethane  
U1 79 N-Nitrosopiperidine  
U180 N-Nitrosopyrrolidine  
U181 5-Nitro-o-toluidine  
U193 1,2-Oxathiolane, 2,2-dioxide  
U058 2H-1,3,2-Oxazaphosphorin-2-amine,  
N,N-bis(2-chloroethyl)tetrahydro-,2-  
oxide  
U1 15 Oxirane  
U126 Oxiranecarboxyaldehyde  
U041 Oxirane, (chloromethyl)-  
U1 82 Paraldehyde  
U183 Pentachlorobenzene  
U1 84 Pentachloroethane  
U185 Pentachloronitrobenzene (PCNB)  
F027 Pentachlorophenol  
U161 Pentanol, 4-methyl  
U186 1,3-Pentadiene  
U187 Phenacetin  
U188 Phenol

U048 Phenol, 2-chloro-  
U039 Phenol, 4-chloro-3-methyl-  
U081 Phenol, 2,4-dichloro-  
U082 Phenol, 2,6-dichloro-  
U089 Phenol, 4,4'-(1,2-diethyl-1,2-ethene  
diyl)bis-, (E)-  
U101 Phenol, 2,4-dimethyl-  
U052 Phenol, methyl-  
U132 Phenol, 2,2'-methylenebis[3,4,6-  
trichloro-  
U1 70 Phenol 4-nitro-  
F027 Phenol, pentachloro-  
F027 Phenol, 2,3,4,6-tetrachloro-  
F027 Phenol, 2,4,5-trichloro-  
F027 Phenol, 2,4,6-trichloro-  
U1 50 L-Phenylalanine, 4-[bis(2 chloro  
ethyl)amino]-  
U145 Phosphoric acid, lead(2+) salt (2:3)  
U087 Phosphorodithioic acid, O,O-diethyl  
S-methyl ester  
U189 Phosphorus sulfide  
U1 90 Phthalic anhydride  
U1 91 2-Picoline  
U179 Piperidine, 1-nitroso-  
U192 Pronamide  
U194 1-Propanamine  
U1 11 1-Propanamine, N-nitroso-N-propyl-  
U1 10 1-Propanamine, N-propyl-  
U066 Propane, 1,2-dibromo-3-chloro-  
U083 Propane, 1,2-dichloro-  
U149 Propanedinitrile  
U1 71 Propane, 2-nitro-  
U027 Propane, 2,2'-oxybis[2-chloro-  
U193 1,3-Propane sultone  
F027 Propanoic acid, 2-(2,4,5-trichloro  
phenoxy)-  
U235 1-Propanol, 2,3-dibromo-, phosphate  
\*\* (3:1)  
U140 1-Propanol, 2-methyl-  
U002 2-Propanone  
U007 2-Propenamide  
U084 1-Propene, 1,3-dichloro-

U243 1-Propene 1,1,2,3,3,3,-hexachloro-  
U009 2-Propenenitrile  
U152 2-Propenenitrile, 2-methyl-  
U008 2-Propenoic acid  
U113 2-Propenoic acid, ethyl ester  
U118 2-Propenoic acid, 2-methyl-, ethyl  
ester  
U162 2-Propenoic acid, 2-methyl-, methyl  
ester  
U194 n-Propylamine  
U083 Propylene dichloride  
U148 3,6-Pyridazinedione, 1,2-dihydro-  
U196 Pyridine  
U191 Pyridine, 2-methyl-  
U237 2,4-(1H,3H)-Pyrimidinedione, 5-  
[bis(2-chloroethyl)amino]-  
U164 4(1H)-Pyrimidinone, 2,3-dihydro-6-  
methyl-2-thioxo-  
U180 Pyrrolidine, 1-nitroso-  
U200 Reserpine  
U201 Resorcinol  
U202 Saccharin and salts  
U203 Safrole  
U204 Selenious acid  
U204 Selenium dioxide  
U205 Selenium sulfide  
U205 Selenium sulfide SeS<sub>2</sub>  
U015 L-Serine, diazoacetate (ester)  
F027 Silvex (2,4,5-T)  
U206 Strptozotocin  
U103 Sulfuric acid, dimethyl ester  
U189 Sulfur phosphide  
F027 2,4,5-T  
U207 1,2,4,5-Tetrachlorobenzene  
U208 1,1,1,2-Tetrachloroethane  
U209 1,1,2,2-Tetrachloroethane  
U210 Tetrachloroethylene  
F027 2,3,4,6-Tetrachlorophenol  
U213 Tetrahydrofuran  
U214 Thallium(!) acetate  
U215 Thallium(!) carbonate U216 Thallium(!) chloride  
U216 Thallium chloride TlCl

- U217 Thallium(I) nitrate
- U218 ThioacetamideU153 Thiomethanol
- U244 Thioperoxydicarbonic diamide  
[(H<sub>2</sub>N)C(S)]<sub>2</sub>S<sub>2</sub>, tetramethyl-
- U219 Thiourea
- U244 Thiram
- U220 Toluene
- U221 Toluenediamine
- U223 Toluene diisocyanate
- U328 o-Toluidine
- U353 p-Toluidine
- U222 o-Toluidine hydrochloride
- UO11 1H-1,2,4-Triazol-3-amine
- U227 1,1,2-Trichloroethane
- U228 Trichloroethylene
- U1 21 Trichloromonofluoromethane
- F027 2,4,5-Trichlorophenol
- F027 2,4,6-Trichlorophenol
- U234 1,3,5-Trinitrobenzene
- U182 1,3,5-Trioxane, 2,4,6-trimethyl-
- U235 Tris(2,3-dibromopropyl) phosphate
- U236 Tryphan blue
- U237 Uracil mustard
- U1 76 Urea, N-ethyl-N-nitroso-
- U1 77 Urea, N-methyl-N-nitroso-
- U043 Vinyl chloride
- U248 Warfarin and salts, when present at  
concentrations of 0.3% or less
- U239 Xylene
- U200 Yohimban-16-carboxylic acid, 11,17-  
dimethoxy-18-[(3,4,5-trimethoxy  
benzoyl)oxy]-, methyl ester, (3beta,  
16beta, 17alpha, 18beta,20alpha)-
- U249 Zinc phosphide Zn<sub>3</sub>P<sub>2</sub>, when present  
at concentrations of 10% or less