

# Lamar University

## Hazardous Waste Management Program

### Reference:

<http://www.epa.gov/epawaste/hazard/generation/cesqg.htm>

Click on this link on this web page

[Part 261.5 of the Code of Federal Regulations \(40 CFR Part 261.5\)](#)

and/or

[Environment, Health and Safety Online - Summary of Requirements for CESQGs](#)

Reviewed: 01/28/21

## **1. Purpose**

The purpose of this program is to provide a safe and compliant process for the disposal of Hazardous Wastes at Lamar University. The program is designed to comply with Federal and State regulations for Hazardous Waste.

This program does not apply to the disposal of radioactive, infectious, or biological wastes. Compliance is critical and requires full cooperation from all University departments.

## **2. Hazardous Waste Regulation**

In 1980 the Resource Conservation and Recovery Act (R.C.R.A.) was established and administered by the Environmental Protection Agency (EPA) (42 U.S.C.) Under this act the EPA has the responsibility for regulating hazardous chemical waste. R.C.R.A. established a 'cradle to the grave' hazardous chemical waste management requirement to protect the public health and environment from the improper disposal of chemical waste.

The Texas Commission on Environmental Quality (TCEQ) administers an equivalent to RCRA for the State of Texas under Industrial Solid Waste and Municipal Hazardous Waste Regulations (Texas Administrative Code Title 30 Part 1, chapter 335).

Lamar University is a "Very Small Quantity Generator" (VSQG) (EPA) or "Conditionally Exempt Small Quantity Generator" (CESQG) (TCEQ) of hazardous waste and must comply with State and Federal regulations on waste disposal to allow us to maintain this status. Conditionally Exempt Small Quantity Generators (CESQG) generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste. All quantities of acute hazardous waste are subject to full regulation under parts 262 through 268, and parts 270 and 124 of 40 CFR, and the notification requirements of section 3010 of RCRA.

Please note that if we exceed our quotas to maintain our VSQG status then the paperwork and forms required by all who produce or purchase chemicals will be expanded dramatically.

Lamar University is not allowed to treat or dispose of hazardous chemical waste other than by a licensed vendor. It is illegal to dispose of hazardous chemical waste by dilution, evaporation, or disposal in the sanitary/storm sewers or the local municipal landfill. Failure to comply with chemical waste regulations could result in large fines and penalties for the University. Individual generators/employees causing the violation may

be personally liable. Violations can range from improper labeling waste to intentional disposing of Hazardous Chemical Waste into the air, down the drains or in the trash.

A Waste generator is responsible ‘from the cradle to the grave’ and is always responsible for environmental damage; therefore the choice of a reliable disposal facility is very important. In Texas non-compliance violations can be civil, criminal, or administrative violations and penalties can range from up to \$25,000/day in fines to a fifteen year prison term for individuals.

### **3. Responsibilities**

Lamar University’s Department of Environmental Health and Safety and Risk Management is responsible for:

- The administration of the Hazardous Waste Management Program at Lamar University.
- Ensuring that all chemical waste is properly packaged, labeled, logged before disposal
- Ensuring that all chemical waste is transported to a permitted off-site facility for storage, treatment and disposal.
- The collection, storage and transportation of all hazardous chemical waste for disposal.
- Provision of information and assistance to individual chemical waste generators
- Maintaining permanent records of movement of all Hazardous Chemical Waste on the campus.

Hazardous Waste Generators, such as researchers, professors, shop foreman, etc., are responsible for:

- Following the disposal procedures
- Assuring that their employees and research assistants are trained in proper disposal procedures
- Properly identifying the hazardous chemical waste
- Training the employees and students on the hazards of the chemicals and waste in their areas
- Developing Emergency Response Procedures for chemical spills.

### **4. Hazardous Waste Disposal Program**

Hazardous Chemical Waste Determination

Material becomes a waste when it is no longer useful as determined by the 'owner' and shall be requested for disposal. If the material is to be disposed of, it shall be determined if this material is hazardous or non-hazardous.

Hazardous wastes are those defined by the United States Occupational Safety and Health Administration (OSHA) as a substance for which there is a statistically significant evidence, based on at least one scientific study, showing that acute or chronic harm may result from exposure to that substance. This is regardless of whether the handling of the material is proper or improper.

Chemical waste can be made less hazardous by treatment to reduce the hazard or the quantity of waste in the laboratory if the treatment protocol is included in the experimental procedure.

A chemical waste is hazardous if it fits into one of the following categories:

a. Listed Waste:

A listed waste is one included in one of four lists, generated by the United States Environmental Protection Agency (EPA; TCEQ). Identified by the letters F, K, P, and U. Within the lists the materials are assigned hazardous waste numbers and hazard rating by the EPA. The ratings systems and the lists are provided in appendix 2.

The definitions for the list types are as follows:

(i) Type F wastes are generic categories of solvents and wastes and waste water from some specific processes.

(ii) Type K wastes are hazardous wastes from specific sources.

(iii) Type P wastes include acutely hazardous wastes.

(iv) Type U wastes are specific commercial chemical products, chemical intermediates and off-specification chemical products.

b. Characteristic Waste:

If a waste is not found to be one of the Listed Wastes it may be an "unknown" waste, which must be tested to determine the nature of the waste properties or characteristics. The Characteristics to be evaluated are:

(i) Ignitability (Waste #D001): Any easily combustible or flammable liquid with a flash point less than 600 C (1400 F), or solid that burns easily.

(ii) Corrosivity (Waste #D002): Any waste that dissolves metals or other materials or burns the skin, pH less than 2 or greater than 12.5.

(iii) Reactivity (Waste #D003): Wastes which are unstable, release toxic gases, or undergo rapid or violent chemical reaction with water or other materials.

(iv) EP Toxicity (Waste #s D004-D017): Extracts of the material contain high concentrations of heavy metals and/or specific pesticides that could be released into ground water.

Appendix 2 contains the list of the contaminants and their maximum allowed concentrations to exempt from EPA Toxic designation.

### **Hazardous Waste Accumulation and Storage:**

The University shall store all Hazardous Waste in a central temporary accumulation building.

This temporary storage facility complies with subpart DD of the 40 CFR Part 265.

The containment/storage building complies with 40 CFR 265.1101

The University has two storage units within the containment building.

The chemical containment/storage building is located adjacent to the Dept. of Chemistry and Biochemistry building facing the Sheila Humphrey Recreational area parking lot.

### **Inspection of the Temporary Accumulation unit**

The accumulation units shall be inspected regularly by the Hazardous Waste Coordinator to look for any signs of corrosion, dents, bulges, cracks, or other signs of deterioration that could cause hazardous waste to be released.

The inspection shall be documented and retained for a period of one year.

The standard for containment building condition reporting (40 CFR Part 265.1101 (c) (3)) shall be followed upon detection of a condition that could lead to or has caused a release of hazardous waste.

### **Emergency Preparedness and Prevention**

The central accumulation area/building shall be maintained and operated to minimize the potential for the release of hazardous material to the environment. (Refer to 40 CFR Part 265.31)

The following applicable emergency equipment and procedures shall be maintained in the central accumulation building by Facilities Management and periodically tested to ensure it is in working order:

- Fire alarms
- Spill control equipment
- Decontamination equipment
- Automatic sprinklers
- A posted list of emergency contact numbers

- All alarm systems and fire protection equipment shall be tested and maintained as necessary to assure its proper operation in the time of emergency by the Lamar University Facilities Management Department.
- Waste containers shall be arranged in the central accumulation area so that there is adequate aisle space to allow access for emergency personnel and equipment.
- Lamar University shall comply with the Preparedness and Prevention Standard 40 CFR Part 265.37 concerning emergency arrangements with local and state authorities.

### **Procedures for Hazardous Waste Removal (Off-site)**

The Department of Risk Management shall require all contracted hazardous waste transporters to comply with the requirements set forth by this plan, in addition to the federal, state and local hazardous waste regulations.

### **Packing**

The contracted hazardous waste transporter shall package all hazardous waste in accordance with all Department of Transportation regulations under 49 CFR Parts 173, 173.12 & Subpart B, 178, and 179.

The Department of Risk Management shall require all contracted hazardous waste transporters to carry emergency spill cleanup materials when packing hazardous materials for transportation.

### **Labeling and Marking**

Before transporting the hazardous waste, the transporter shall label each package in accordance with Department of Transportation labeling requirements (49 CFR Part 172 Subpart D and E).

The transporter shall mark all containers of 110 gallons or less used in transportation with the following words and information displayed in accordance with the requirements of 49 CFR 172.304: **“HAZARDOUS WASTE”**

Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the “U.S. Environmental Protection Agency”.

### **Placarding**

The transporter shall placard the transportation vehicle according to Department of Transportation regulations 49 CFR Part 172 Subpart F for hazardous materials.

### **Manifest**

Lamar University Dept. of Environmental Health and Safety and Risk Management, Hazardous Waste Coordinator and hazardous waste transporter will mutually designate

on the manifest one primary facility that is permitted to handle the waste described on the manifest.

### **Procedures for Hazardous Waste removal On-site**

As waste is classified it shall be accumulated and stored until it can be disposed of. The following rules shall be applied to the accumulation and storage of materials classified as hazardous waste:

- a. Hazardous wastes of differing classifications or physical properties shall be kept in separate closed containers, as shall wastes that are incompatible with one another. This will require that aqueous and organic wastes be separated. Halogenated and non-halogenated organic wastes shall be kept separate from one another.
- b. Hazardous wastes shall be stored in closed containers that can be sealed and are not subject to decomposition by the contents.
  - (i) Aqueous hazardous waste solutions shall not be stored in metal drums.
  - (ii) Waste with pH greater than 8 wastes shall not be stored in glass containers.
  - (iii) Organic hazardous wastes shall be accumulated and stored in containers which do not contain polymer components that may be structurally weakened by exposure to the wastes.
  - (iv) Wide mouth containers shall not be used for liquids. Two inch space shall be maintained at the top of each container of liquid. Drums require a four inch head space.
- c. **Dry PPE waste (rags, towels, Tyvek suits, gloves etc.) is disposed of as Class I Non-RCRA Waste**, assuming there are no visible liquids and no high toxicity constituents such as mercury, PCBs etc. This waste must be collected, bagged and labeled. This **Non-RCRA Waste** will be collected at the same time as any Hazardous Waste collection requested or by separate request. The local landfill is designated for municipal trash only; this waste needs to go a Class I landfill.

### **Universal Waste**

This is any hazardous waste that is subject to 40 CFR Part 273 and TAC 335.261 and includes:

- a. Art related chemical waste
- b. Mercury thermometers and thermostats (unbroken) that are not hazardous using 40 CFR 261 Subpart C
- c. Batteries including lead-acid that are not managed under 40 CFR 266, Subpart G
- d. Recalled pesticides that are part of a voluntary or mandatory recall under FIFRA or pesticides managed as part of a waste pesticide program





### **Nonhazardous waste:**

Wastes that meet none of the criteria of hazardous wastes shall be considered as nonhazardous. Following certification of a waste as nonhazardous it may be treated as general garbage. It is important however that the waste be certified first.

### **Disposal of Nonhazardous Wastes:**

The City of Beaumont does regulate what wastes may be disposed of in the public sewers. Some of these rules are more stringent than the criteria for classification of a waste as hazardous.

Based on these rules, nonhazardous wastes that meet the following properties may NOT be disposed of in the sewer lines.

- (i) Any fat, oil, grease, ash, cinder, sand, mud, shavings, metal, glass, tar or other solid or viscous liquid substance which may cause obstruction to the flow in sewer or other interferences with the proper operation of the wastewater treatment system.
- (ii) Any liquid or vapor having a flash point temperature higher than 650C (1500F).
- (iii) Any wastewater with a pH less than 6.0 or above 11.0 or having any corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the wastewater treatment system.
- (iv) Any waste or water containing suspended or undissolved solids of such character that unusual attention or expense is required to handle such material.
- (v) Any water with objectionable odor or color.

### **Hazardous Waste labelling:**

Original container labels shall be destroyed, defaced completely or preferably removed if used for chemical waste accumulation.

When the waste is first added the words "Unwanted Material" or "other equally effective wording that is used consistently" shall be added to the label until time for collection and a "**Hazardous Waste**" determination made.

Once unwanted material has been introduced to an accumulation/ storage container, the date shall be noted on the container.

## Labelling Requirements:

- EPA regulations require that waste containers be labelled with the chemical contents.
- The label has to have enough information to make a 'Hazardous Waste' determination.
- List all chemicals added including water. Lists can be continued on a separate label.
- List the amounts of the contributions to the container. Include the EPA waste identification number of a waste if known.
- Use full names of chemicals and compounds, NOT formula, abbreviations, or structures.
- GHS labels for all these chemicals listed shall be added.

If a chemical waste contains a material with hard-to-find Safety Data Sheets (e.g. an obscure proprietary material), then the Waste Generator shall supply an SDS for the Hazardous Waste Coordinator.

When a container is determined to require collection by the Hazardous Waste Assistant then a request shall be made and a completion date added to the label.

The request for removal shall be by email, when containers are full or there is no expectation of any further wastes of the type in the container. This shall be within six months of the start of accumulation or within three days of the container being full if less than six months. (See section on Removal Procedures).

A file copy of the label used by the Hazardous Waste can be obtained from the Dept. of EHS & Risk Management Hazardous Waste Coordinator. Diagrams of these labels are shown in the "Labels" section. **Use of this label is encouraged.**

The labels can be printed on purpose made adhesive backed labels

On these labels;

The date is the date that accumulation is complete

The Waste Generator is the Principal Investigator or Research Faculty in charge of the lab that generated the waste.

Labels for containers of potentially explosive materials such as picric acid; silanes; nitro compounds and ethers shall indicate the percentage concentration of these chemicals.

Waste shall be removed from the site to the Waste handling area (room 114 in Chemistry building) by the Waste Handling Assistant. Waste from teaching laboratories shall be removed when all sections have completed the particular experiment that produces the waste. An exception to this exists where halogenated and non-halogenated organic solvent wastes produced in successive experiments are collected separately in larger containers. Such containers should be removed at the end of the semester.

Containers shall have a two inch headspace for bottles and four inch head space for drums.

Transport of waste shall be done following the rules for the transport of any chemical material in the Lamar University Chemical Hygiene Plan.

Mercury thermometers that are broken and their pieces may contain small amounts of mercury and shall be placed in a separate labeled, and closed container from other glass, this is considered hazardous waste, and shall be collected by the Hazardous Waste Assistant.

Clean glass wastes, particularly broken glass, shall be kept separate from the general garbage to avoid potential safety hazards to custodians. Specific glass containers shall be made available in each laboratory area for the disposal of glass waste. Workers shall wear goggles and appropriate gloves when disposing of this clean glass waste. **This waste is not collected by Dept. of Risk Management, it is the responsibility of the individual academic department.**

Needles, and needle-containing equipment (e.g. syringes with needles installed), are considered sharps waste, and thus medical waste. They must be disposed of in accordance with Texas regulation of health care facilities. In practice, this involves disposal via the University's sharps containers, which are then sent back to the sharps container supplier, which safely processes the waste. The Hazardous Waste Disposal Coordinator can supply further details.

### **Removal Procedures**

- a. Once the container is ready for collection add the accumulation complete date and request collection by email from the Hazardous Waste Coordinator. The Coordinator needs to know the building and room number and shall generate an email response to the Hazardous Waste Assistant, copied to the generator. The Hazardous Waste Assistant shall arrange a fixed time to collect this waste with the generator and shall send this information by email, copied to the Coordinator.
- b. Containers with improper caps, leaks, surface contamination or improper labelling shall not be accepted.
- c. It is **illegal** to dispose of hazardous chemical in any of the following way:
  1. Disposal through the sanitary system
  2. Intentional evaporation in a fume hood.
  3. Disposal in the regular trash.

### **Transportation**

- A two level cart, with a three-inch lip on each level, shall be used to transport all hazardous waste from the laboratory/site to the temporary handling area.
- Freight elevators, where possible, shall be used to transport waste to the temporary accumulation area. Personnel shall not ride the elevators with these materials.
- Chemically incompatible materials shall be separated using the two levels on the cart.

- Spill cleanup materials will be present on the cart at all times during pick-up of hazardous materials. Drip pads shall line each level of the cart to prevent any mixing of incompatible chemicals.
- Transportation cart shall be labeled with hazard warning signs.

**Personal Protection**

Personal protective equipment shall be required during hazardous waste pickups. Safety personnel will determine the level of protection required to safely transport the materials.

**Labels**

File copies of these can be obtained from the Waste Coordinator.  
 Chemical name/common name shall be written for all chemicals in the container.  
 Chemical Formulae or abbreviations are not acceptable.  
 This information can be found on the SDS along with the GHS information.

**UNIVERSAL WASTE**

Lamar University  
 EPA ID No. TXD053623179

Chemical Composition and Associated Hazard	%
<input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input type="checkbox"/> Other (explain) <input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Toxic <input type="checkbox"/> Ignitable <input type="checkbox"/> Oxidizer	
Waste Generator information	
Department	
Building	

**HAZARDOUS WASTE**

Lamar University

EPA ID No. TXD053623179

Chemical Composition and Associated Hazard	%
<input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input type="checkbox"/> Other (explain) <input type="checkbox"/> Non-Hazardous <input type="checkbox"/> Toxic <input type="checkbox"/> Ignitable <input type="checkbox"/> Oxidizer	
Waste Generator information	
Department	
Building	

**Emergency Procedures**

All employees shall be informed of hazardous materials they might use or be exposed to at work. The program shall also include recorded training on handling spills and other emergencies. Safety Data Sheets are a source of this information and shall be maintained in a readily accessible area or database for all chemicals used or stored within a workplace. Special cleanup supplies shall be available and employees shall be trained on how to use these supplies.

Contaminated clothing, rags, absorbent materials, or other waste **from** cleanup of spills or leaks must be disposed of as hazardous waste.

All labs shall post emergency numbers to be used and develop response procedures for emergencies.

**Emergency Telephone numbers:**

LU Police	409.880.7777
LU Health center	409.880.8466
LU Safety Specialist	409.880.8276
Email: nmacy@lamar.edu	
LU Hazardous waste coordinator	409.880.8276
Email: nmacy@lamar.edu	

**Off Campus:**

Emergency services	911
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## **Emergency Spill Response Plan for laboratories**

The University Risk Management Dept. shall reference the Hazardous Materials Emergency Response Plan for emergency spill procedures.

## **Training**

The University Hazardous Waste Coordinator shall provide training to the laboratory Principal Investigator, Chemical Hygiene Officer, and anyone who handles hazardous waste in laboratories.

Each employee/student shall receive training on proper handling of chemicals and emergency response procedures.

Initial training shall be completed during the first month of employment (refresher training is provided annually thereafter). Hazardous waste training shall be conducted as part of the annual laboratory safety training.

The laboratory Principal Investigator, Moderator, Chemical Hygiene Officer, shall document all hazardous waste training. Training records will be kept for at least three years from the date the employee last worked at the university

## **Appendix 1**

### **Definitions**

***Central Accumulation Area/building*** – Area designated for the storage of hazardous wastes prior to moving to permitted disposal facility

***Generator*** – Any person who produces hazardous waste.

***Hazardous material*** – material that has been determined to pose an unreasonable risk to health, safety and property when transported.

***Hazardous Waste*** – Any waste material listed or identified in title 40 CFR, part 261, subpart C and D or exhibiting the characteristics of ignitability, corrosivity, reactivity, or toxicity also defined in Part 261.

***Manifest*** – A legal document containing required information, which has to accompany shipments of hazardous waste or Class 1 – Industrial solid waste transported on public roads or thoroughfares.

***Mixed waste*** – A radioactive waste that is also a hazardous waste.

***Permit*** – A written document issued by the Environmental Protection Agency (EPA) or the Texas Commission on Environmental Quality (TCEQ) that, by its conditions,

authorizes the construction, installation, modification, or operation of a specified municipal hazardous waste or industrial solid waste storage, processing, or disposal facility in accordance with specified limitations.

**Placard** – Diamond shaped color coded signs placed on the outside of transporting vehicles indicating the hazards of the cargo.

**Satellite Accumulation area** –An area, system, or structure used for temporary accumulation of hazardous waste prior to transport to the central accumulation area.

**Waste Handling Area** – The area used to log in and prepare appropriate labels for material collected as Chemical Waste prior to moving into the Central Accumulation Area.

## Appendix 2

### EPA HAZARDOUS WASTE CODES

For up-to-date information, consult US CFR Title 40, Sub-parts C-E.

#### Code Waste description

#### Characteristic Hazardous Waste

D001 Ignitable waste-A solid exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

- (1) It is a liquid, other than an aqueous solution containing less than 24 percent alcohol by volume and has a flash point less than 60°C(140°F) as determined by a Pensky-Martens Closed Cup Tester, using the test method specified in ASTM Standard D-93-79 or D-93-80, or a Setaflash Closed Cup Tester, using the method specified in ASTM Standard D-3278-78, or as determined by an equivalent test method approved by the Administrator under procedures set forth in 40 CFR Part 260.
- (2) It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard. For solids, this can be tested through SW-846 Test Method 1030.
- (3) It is an ignitable compressed gas as defined in 49 CFR Part 173 and as determined by the test methods described in that regulation or equivalent test methods approved by the Administrator under 40 CFR Part 260.

(4) It is an oxidizer as defined in 49 CFR Part 173.

D002 Corrosive waste-A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:

(1) It is aqueous and has a pH less than or equal to 2, or greater than or equal to 12.5, as determined by a pH meter using either an EPA test method or an equivalent test method approved by the Administrator under the procedures set forth in 40 CFR Part 260.

(2) It is a liquid and corrodes steel (SAE 1020) AT A RATE GREATER THAN 6.35 MM (0.25 inch) per year at a test temperature of 55 C (130 F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01069 or an equivalent test method approved by the Administrator under the procedures set forth in 40 CFR Part 260.

D003 Reactive waste: A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

(1) It is normally unstable and readily undergoes violent change without detonating.

(2) It reacts violently with water.

(3) It -forms potentially explosive mixtures with water.

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

(5) It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

(6) It is capable of detonation or explosive decomposition or reaction at standard temperature and pressure.

(7) It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure

(8) It is a forbidden explosive, a Class A explosive, or a Class B explosive as defined in 49 CFR Part 173.

EP Toxicity- A solid waste exhibits the characteristic of EP toxicity if, using the test methods described in 40 CFR Part 261 Appendix 11 (Toxicity Characteristic Leaching Procedure (TCLP) SW-846 Test Method 1311) or equivalent methods approved by the Administrator under the procedures set forth in 40 CFR Part 260, the extract from a representative sample of the waste contains any of the contaminants listed as D004 thru D017 at a concentration equal to or greater than the respective value given. Where the waste contains less than 0,5 percent filterable solids, the waste itself, after filtering, is considered to be the extract for the purposes of this section.

## **Waste Description, 2009**

TABLE 1—MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC



<b>EPA HW No.<sup>1</sup></b>	<b>Contaminant</b>	<b>CAS No.<sup>2</sup></b>	<b>Regulatory Level (mg/L)</b>
D004	Arsenic	7440-38-2	5.0
D005	Barium	7440-39-3	100.0
D018	Benzene	71-43-2	0.5
D006	Cadmium	7440-43-9	1.0
D019	Carbon tetrachloride	56-23-5	0.5
D020	Chlordane	57-74-9	0.03
D021	Chlorobenzene	108-90-7	100.0
D022	Chloroform	67-66-3	6.0
D007	Chromium	7440-47-3	5.0
D023	o-Cresol	95-48-7	<sup>4</sup> 200.0
D024	m-Cresol	108-39-4	<sup>4</sup> 200.0
D025	p-Cresol	106-44-5	<sup>4</sup> 200.0
D026	Cresol		<sup>4</sup> 200.0
D016	2,4-D	94-75-7	10.0
D027	1,4-Dichlorobenzene	106-46-7	7.5
D028	1,2-Dichloroethane	107-06-2	0.5
D029	1,1-Dichloroethylene	75-35-4	0.7
D030	2,4-Dinitrotoluene	121-14-2	<sup>3</sup> 0.13
D012	Endrin	72-20-8	0.02
D031	Heptachlor (and its epoxide)	76-44-8	0.008
D032	Hexachlorobenzene	118-74-1	<sup>3</sup> 0.13
D033	Hexachlorobutadiene	87-68-3	0.5
D034	Hexachloroethane	67-72-1	3.0
D008	Lead	7439-92-1	5.0
D013	Lindane	58-89-9	0.4
D009	Mercury	7439-97-6	0.2
D014	Methoxychlor	72-43-5	10.0
D035	Methyl ethyl ketone	78-93-3	200.0
D036	Nitrobenzene	98-95-3	2.0

D037	Pentachlorophenol	87-86-5	100.0
D038	Pyridine	110-86-1	35.0
D010	Selenium	7782-49-2	1.0
D011	Silver	7440-22-4	5.0
D039	Tetrachloroethylene	127-18-4	0.7
D015	Toxaphene	8001-35-2	0.5
D040	Trichloroethylene	79-01-6	0.5
D041	2,4,5-Trichlorophenol	95-95-4	400.0
D042	2,4,6-Trichlorophenol	88-06-2	2.0
D017	2,4,5-TP (Silvex)	93-72-1	1.0
D043	Vinyl chloride	75-01-4	0.2

**§261.31 Hazardous wastes from non-specific sources.**

(a) The following solid wastes are listed hazardous wastes from non-specific sources unless they are excluded under §§260.20 and 260.22 and listed in appendix IX.

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
Generic:		
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in	(T)

	F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I)*
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(T)
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures	(I,T)
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum	(T)
F007	Spent cyanide plating bath solutions from electroplating operations	(R, T)
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process	(R, T)
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process	(R, T)
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process	(R, T)

F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations	(R, T)
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process	(T)
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process. Wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process will not be subject to this listing at the point of generation if the wastes are not placed outside on the land prior to shipment to a landfill for disposal and are either: disposed in a Subtitle D municipal or industrial landfill unit that is equipped with a single clay liner and is permitted, licensed or otherwise authorized by the state; or disposed in a landfill unit subject to, or otherwise meeting, the landfill requirements in §258.40, §264.301 or §265.301. For the purposes of this listing, motor vehicle manufacturing is defined in paragraph (b)(4)(i) of this section and (b)(4)(ii) of this section describes the recordkeeping requirements for motor vehicle manufacturing facilities	(T)
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives. (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)	(H)
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives	(H)
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions	(H)
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- and tetrachlorophenols. (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)	(H)

F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in §261.31 or §261.32.)	(T)
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution	(T)
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline conditions	(H)
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)	(H)
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027	(T)
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)

F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol	(T)
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under §261.4(a)(12)(i), if those residuals are to be disposed of	(T)
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge— Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing	(T)

F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.)	(T)
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\*(I,T) should be used to specify mixtures that are ignitable and contain toxic constituents.

(b) Listing Specific Definitions:

(1) For the purposes of the F037 and F038 listings, oil/water/solids is defined as oil and/or water and/or solids.

(2)(i) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and (A) the units employ a minimum of 6 hp per million gallons of treatment volume; and either (B) the hydraulic retention time of the unit is no longer than 5 days; or (C) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic.

(ii) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other onsite records, documents and data sufficient to prove that: (A) the unit is an aggressive biological treatment unit as defined in this subsection; and (B) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually generated in the aggressive biological treatment unit.

(3) (i) For the purposes of the F037 listing, sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement.

(ii) For the purposes of the F038 listing, (A) sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement and (B) floats are considered to be generated at the moment they are formed in the top of the unit.

(4) For the purposes of the F019 listing, the following apply to wastewater treatment sludges from the manufacturing of motor vehicles using a zinc phosphating process.

(i) Motor vehicle manufacturing is defined to include the manufacture of automobiles and light trucks/utility vehicles (including light duty vans, pick-up trucks, minivans, and sport utility vehicles). Facilities must be engaged in manufacturing complete vehicles (body and chassis or unibody) or chassis only.

(ii) Generators must maintain in their on-site records documentation and information sufficient to prove that the wastewater treatment sludges to be exempted from the F019 listing meet the conditions of the listing. These records must include: the volume of waste generated and disposed of off site; documentation showing when the waste volumes were generated and sent off site; the name and address of the receiving facility; and documentation confirming receipt of the waste by the receiving facility. Generators must maintain these documents on site for no less than three years. The retention period for the documentation is automatically extended during the course of any enforcement action or as requested by the Regional Administrator or the state regulatory authority.

[46 FR 4617, Jan. 16, 1981]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §261.31, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at [www.govinfo.gov](http://www.govinfo.gov).

### Waste Codes

Dxxx – Characteristics of Hazardous Waste (See 40 CFR 261.24)

Fxxx – Hazardous Waste from Non-specific Sources (See 40 CFR 261.31)

Kxxx – Hazardous Waste from Specific Sources (See 40 CFR 261.32)

Pxxx – Discarded Commercial Chemical Products, Off-specification Species, Container Residuals, and Spill Residues thereof – Acute Hazardous Waste (See 40 CFR 261.33)

Uxxx – Discarded Commercial Chemical Products, Off-specification Species, Container Residuals, and Spill Residues thereof – Toxic Wastes (See 40 CFR 261.33)

#### **Code    Waste Description**

P023	Acetaldehyde, Chloro-
P002	Acetamide, N- (aminothioxomethyl)-
P057	Acetamide, 2-fluoro-
P058	Acetic acid, fluoro-, sodium salt
P066	Acetimidic acid, N-[(methylcarbamoyl) oxylthio-, methyl ester
P002	1-Acetyl-2-thiourea
P003	Acrolein
P070	Aldicarb
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	4-alpha-Aminopyridine
P009	Ammonium picrate
P119	Ammonium vanadate
P010	Arsenic acid
P012	Arsenic (III) oxide
P011	Arsenic (V) oxide
P011	Arsenic pentoxide



P012 Arsenic trioxide  
 P038 Arsine, diethyl  
 P036 Arsenous dichloride, phenyl-  
 P054 Aziridine  
 P013 Barium cyanide  
 P024 Benzenamine, 4-chloro-  
 P077 Benzenamine, 4-nitro-  
 P028 Benzene, (chloromethyl)-  
 P042 1,2-Benzenediol, 4[1-hydroxy -2-(methylamino)ethyl]-  
 P046 Benzeneethanamine, alpha, alphasdimethyl-  
 P014 Benzenethiol  
 P001 2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-and salts  
 P028 Benzyl chloride  
 P015 Beryllium dust  
 P016 Bis(chloromethyl)ether  
 P017 Bromoacetone  
 P018 Brucine  
 P021 Calcium cyanide  
 P022 Carbon disulfide  
 P022 Carbon disulfide  
 P095 Carbonic dichloride  
 P023 Chloroacetaldehyde  
 P024 p-Chloroaniline  
 P029 Copper cyanide  
 P030 Cyanides (soluble cyanide salts), not otherwise specified  
 P031 Cyanogen  
 P033 Cyanogen chloride  
 P034 2-Cyclohexyl-4,6-dinitrophenol  
 P036 Dichlorophenylarsine  
 P037 Dieldrin  
 P038 Diethylarsine  
 P041 Diethyl-p-nitrophenyl phosphate  
 P040 O,O-Diethyl O-pyrazinylphosphorothioate  
 P043 Diisopropyl fluorophosphates (DEP)  
 P004 1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-  
 hexahydro-(1-alpha, 4-alpha. 4a-beta, 5-alpha, 8-alpha, 8abeta)-  
  
 P060 1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10-hexachloro1,4,4a,5,8,8a-hexahydro-  
 (1-alpha, 4-alpha, 4a-beta, 5-beta, 8-beta, 8abeta)-  
  
 P037 1,2,3,4,10,10-Hexahydro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydroendo,exo-1,4,5,8-  
 dimethanonaphthalene  
  
 P051 1,2,3,4,10,10-Hexahydro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydroendo,endo-,4,5,8-  
 dimethanonaphthalene

P060 Hexachlorohexahydro-exoexodemethanonaphthalene  
 P044 Dimethoate  
 P045 3,3-Dimethyl-1-(methylthio)- 2-butanone, O-[(methylamino)carbonyloxime  
 P046 alpha,alpha-Dimethylphenethylamine  
 P047 4,6-Dinitro-o-cresol and salts  
 P048 2,4-Dinitrophenol  
 P020 Dinoseb  
 P085 Diphosphoramidate, octamethyl-  
 P039 Disulfoton  
 P049 2,4-Dithiobiuret  
 P050 Endosulfan  
 P088 Endothal  
 P051 Endrin  
 P042 Epinephrine  
 P101 Ethylcyanide  
 P054 Ethyleneimine  
 P097 Famphur  
 P056 Fluorine  
 P057 Fluoroacetamide  
 P058 Fluoroacetic acid, sodium salt  
 P065 Fulminic acid, mercury (2+)salt  
 P059 Heptachlor  
 P062 Hexaethyltetraphosphate  
 P116 Hydrazinecarbothioamide  
 P068 Hydrazine, methyl-  
 P063 Hydrocyanic acid  
 P063 Hydrogen cyanide  
 P096 Hydrogen phosphide  
 P064 Isocyanic acid, methyl ester  
 P060 Isodrin  
 P007 3 (sH) -Isoxazolone, 5-(aminomethyl)-  
 P092 Mercury, (acetato-O)phenyl  
 P065 Mercury fulminate  
 P082 Methamine,N-methyl-N-nitroso-  
 P016 Methane, oxybis(chloro-  
 P112 Methane, tetranitro-  
 P118 Methanethiol, trichloro-P050 6,9-Methano-2,4,3-benzodioxathiepen,6,7,8,9  
 10,10-hexachloro-1,5,5a,6,9,9ahexahydro-3-oxide  
 P059 4,7-Methano- 1H-indene,1,4,5.6,7,8,8-heptachloro-3a,4,7,7atetrahydro-  
 P066 Methomyl  
 P067 2-Methylaziridine  
 P068 Methyl hydrazine  
 P064 Methyl isocyanate  
 P069 2-Methylactonitrile  
 P071 Methyl parathion  
 P072 alpha-Naphthylthiourea

P073 Nickel carbonyl  
 P073 Nicotine and salts  
 P076 Nitric oxide  
 P077 p-Nitroaniline  
 P078 Nitrogen dioxide  
 P076 Nitrogen oxide NO  
 P078 Nitrogen oxide NO<sub>2</sub>  
 P081 Nitroglycerine  
 P082 N-Nitrosodimethylamine  
 P084 N-Nitrosomethylvinylamine  
 P074 Nickel cyanide  
 P085 Octamethylpyrophosphoramide  
 P087 Osmium oxide  
 P087 Osmium tetroxide  
 P088 7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid  
 P089 Parathion  
 P034 Phenol, 2-cyclohexyl-4,6-dinitro-  
 P048 Phenol, 2,4-dinitro  
 P047 Phenol, 2-methyl-4,6-dinitro- and salts  
 P020 Phenol, 2-(1-methylpropyl)-4,6-dinitro-  
 P009 Phenol, 2,4,6-trinitro-, ammonium salt  
 P092 Phenylmercury acetate  
 P093 Phenylthiourea  
 P094 Phorate  
 P095 Phosgene  
 P096 Phosphine  
 P041 Phosphoric acid, diethyl 4-nitrophenylester  
 P039 Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester  
 P094 Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester  
 P044 Phosphorodithioic acid, O,O-dimethyl S [2-(methylamino)-2-Oxoethyl]ester  
 P043 Phosphorofluoric acid, bis(methylethyl)-ester  
 P089 Phosphorothioic acid, O,O-diethyl-O-(4-nitrophenyl) ester  
 P040 Phosphorothioic acid, O,O-diethyl-O-pyrazinyl ester  
 P097 Phosphorothioic acid, O-[4-(dimethylamino)sulfonylphenyl] O,O-dimethyl ester  
 P071 Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester  
 P110 Plumbane, tetraethyl-  
 P098 Potassium cyanide  
 P099 Potassium silver cyanide  
 P070 Prop anal, 2-methyl-2-(methylthio)-O-[(methylamino)Carbonyl]oxime  
 P101 Propanenitrile  
 P027 Propanenitrile, 3-chloro  
 P069 Propanenitrile, 2-hydroxy-2methyl  
 P081 1,2,3-Propanetriol, trinitrate  
 P017 2-Propanone, 1-bromo-P102 Propargyl alcohol  
 P003 2-Propenal  
 P005 2-Propen-1-ol

P067 1,2-Propylenimine  
P102 2-Propyn-1-ol  
P008 Pyridinamine  
P075 Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts  
P111 Pyrophosphoric acid, tetraethyl ester  
P103 Selenourea  
P104 Silver cyanide  
P105 Sodium azide  
P106 Sodium cyanide  
P107 Strontium sulfide  
P108 Strychnidin-10-one, and salts  
P018 Strychnidin-10-one, 2,3dimethoxy-  
P108 Strychnine and salts  
P115 Sulfuric acid, thallium(I) salt  
P109 Tetraethyl dithiopyrophosphate  
P110 Tetraethyl lead  
P111 Tetraethylpyrophosphate  
P112 Tetranitromethane  
P062 Tetrphosphoric acid, hexaethyl ester  
P113 Thallic oxide  
P113 Thalliuni(III) oxide  
P114 Thallium(I) selenite  
P115 Thallium(I) sulfate  
P109 Thiodiphosphoric acid, tetraethyl ester  
P045 Thiofanox  
P049 Thioimidodicarbonic diazide  
P014 Thiophenol  
P116 Thiosemicarbazide  
P026 Thiourea, (2-chlorophenyl)-  
P076 Thiourea, 1-naphthalenyl-  
P093 Thiourea, phenyl-  
P123 Toxaphene  
P118 Trichloromethanethiol  
P119 Vanadic acid, ammonium salt  
P120 Vanadium(V) oxide  
P084 Vinylamine, N-methyl-nitroso-  
P001 Warfarin  
P121 Zinc cyanide  
P122 Zinc phosphide

**Discarded Commercial Chemical Products, Off-Specification Species,  
Container Residues, and Spill Residues Thereof-Toxic Waste**

U001 Acetaldehyde  
U034 Acetaldehyde, trichloro-  
U187 Acetamide, N-(4-ethoxyphenyl)-

U005 Acetamide, N-914-fluoren-2-yl  
 U112 Acetic acid, ethyl ester  
 U 144 Acetic acid, lead salt  
 U214 Acetic acid, thallium (1+) salt  
 U232 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  
 U014 Auramine  
 U015 Azaserine  
 U010 Azirino(2', 3':3,4) pyrrolo-[1,2-a]indole-4,7-dione, 6-amino-  
 8[((aminocarbonyl)ocy)methyl]-1,la,2,8,8a,8b-hexahydro-8amethoxy-5-methyl-  
  
 U157 Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-  
 U016 3,4-Benzacridine  
 U017 Benzal chloride  
 U192 Benzamide, 3,5-dichloro-N-(1,ldiethyl-2-propynyl)-  
 U018 Benz[a]anthracene  
 U094 Benz[a] anthracene, 7,12-d.imethyl-  
 U012 Benzenamine  
 U014 Benzenamine,4,4'-carbonimidoylbis(N,N-dimethyl-)  
 U049 Benzenamine, 4-chloro-2-methyl-  
 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-chloroalpha-(4-chlorophenyl)-alpha-hydroxy,ethyl ester  
 U030 Benzene, 1-bromo-4-phenoxy-  
 U035 Benzenebutanoic acid,4-[bis(2-chloroethyl) amino]-  
 U037 Benzene, chloro-  
 U221 Benzenediamine. ar-methyl  
 U028 1,2-Benzenedicarboxylic acid, bis(2-ethylhexy) ester  
 U069 1,2-Benzenedicarboxylic acid, dibutylester  
 U088 1,2-Benzenedicarboxylic acid, diethylester  
 U102 1,2-Benzenedicarboxylic acid, dimethylester  
 U107 1,2-Benzenedicarboxylic acid,di-n-octyl ester

U070 Benzene, 1,2-dichloro-  
 U071 Benzene, 1,3-dichloro-  
 U072 Benzene, 1,4-dichloro-  
 U060 Benzene, 1,1'-(2,2-dichloroethylidene)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-  
 U105 Benzene, 1-methyl-2,4-dinitro-  
 U106 Benzene, 2-methyl-1,3-dinitro-  
 U055 Benzene, (1-methylethyl)-  
 U169 Benzene, nitro-  
 U183 Benzene, pentachloro-  
 U185 Benzene, pentachloronitro-  
 U020 Benzenesulfonic acid choride  
 U020 Benzenesulfonyl chloride  
 U207 Benzene, 1,2,4,5-tetrachloro-  
 U061 Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-  
 U247 Benzene, 1,1'-(2,2,2-trichloroethylidene)[4-ethoxy-  
 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)-  
 U141 1,3-Benzodioxole, 5-(1-propenyl)-  
 U090 1,3-Benzodioxole, 5-propyl  
 U064 Benzo[rs]t]pentaphene  
 U022 Benzo[a]pyrene  
 U197 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-  
 U027 Bis(2-chloroisopropyl)ether  
 U024 Bis(2-chloromethoxy)ethane  
 U028 Bis(2-ethylhexyl)phthalate  
 U225 Bromoform  
 U030 4-Bromophenyl phenyl ether  
 U128 1,3-Butadiene, 1,1,2,3,4,4-hexachloro-  
 U172 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-methoxy-1-oxobutoxy) methyl-12,3,5,7a-tetrahydro-1-pyrrolizin-1-yl ester,[1S-[alpha (Z),7(2S, R),7aa;-Pha)]-  
U031 n-Butyl alcohol  
U136 Cacodylic acid  
U032 Calcium chromate  
U238 Carbamic acid, ethyl ester  
U178 Carbamic acid, imethylnitroso-, ethylester  
U097 Carbamic chloride, dimethyl-  
U114 Carbamodithioic acid, 1,2-ethanediylbis-, salts and esters  
U062 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  
U026 Chlornaphazine  
U037 Chlorobenzene  
U039 p-Chloro-m-cresol  
U041 I-Chloro-2,3-epoxypropane  
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, calcium salt  
U050 Chrysene  
U051 Creosote  
U052 Cresole (Cresylic acid)  
U053 Crotonaldehyde  
U055 Cumene  
U246 Cyanogen bromide  
U197 2,5-Cyclohexadiene-1, 4-dione  
U056 Cyclohexane  
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 Diallate,  
U063 Dibenz[a,h]anthracene  
U064 Dibenzo[a,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  
U081 2,4-Dichlorophenol  
U082 2,6-Dichlorophenol  
U240 2,4- Dichlorophenoxy acetic acid salts and esters  
U083 1,2-Dichloropropane  
U084 1,3-Dichloropropene  
U085 1,2:3,4-Diepoxybutane  
U108 1,4-Diethyleneoxide  
U086 N,N-Diethylhydrazine  
U087 O,O-Diethyl-S-methyl-dithiophosphate  
U088 Diethyl phthalate  
U089 Diethylstilbestrol  
U090 Dihydrosafrole  
U091 3,3'-Dimethoxybenzidine  
U092 Dimethylamine  
U093 Dimethylaminoazobenzene  
U094 7,12-Dimethylbenz[a]anthracene  
U095 3,3'-Dimethylbenzidine  
U096 alpha,alpha-Dimethylbenzylhydroperoxide  
U097 Dimethylcarbamoyl 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  
 U001 Ethanal  
 U174 Ethanamine, N-ethyl-N-nitrosoU1551,2-Ethanediamine, N,N-dimethyl-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  
 U227 Ethanol, 2-ethoxy-  
 U359 Ethane, 1, 1,2-trichloro-  
 U173 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-,(E)-  
 U210 Ethene, tetrachloro  
 U228 Ethene, trichloro  
 U112 Ethyl acetate  
 U113 Ethyl acrylate  
 U238 Ethyl carbamate  
 U038 Ethyl 4,4'-dichlorobenzilate  
 U114 Ethylenebisdithiocarbamic acid, saltsand esters  
 U067 Ethylene dibromide  
 U077 Ethylene dichloride  
 U359 Ethylene glycol monoethylether  
 U115 Ethylene oxide  
 U116 Ethylene thiourea  
 U117 Ethyl ether  
 U076 Ethylidene dichloride  
 U118 Ethyl methacrylate  
 U119 Ethylmethanesulfonate  
 U120 Fluoranthene  
 U122 Formaldehyde  
 U123 Formic acid  
 U124 Furan  
 U125 2-Furancarboxaldehyde  
 U147 2,5-Furandione  
 U213 Furan, tetrahydro-

U125 Furfural  
U124 Furfuran  
U206 D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosourcido)-  
U126 Glycidylaldehyde  
U163 Guanidine, N-methyl-N'-nitro-Nnitroso-  
U127 Hexachlorobenzene  
U128 Hexachlorobutadiene  
U129 Hexachlorocyclohexane(gammaisomer)  
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  
U134 Hydrofluoric acid  
U 134 Hydrogen fluoride  
U135 Hydrogen sulfide  
U096 Hydroperoxide,1-methyl-1-phenylethyl-  
U136 Hydroxydimethylarsine xide  
U116 2-Imidazolidinethione  
U137 Indeno[1,2,3-cd]pyrene  
U139 Iron dextran  
U190 1,3-Isobenzofurandione  
U140 Isobutyl alcohol  
U141 Isosafrole  
U142 Kepone  
U143 Lasiocarpine  
U144 Lead acetate  
U146 Lead, bis(acetate-O)tetrahydroxytri-  
U145 Lead phosphate  
U146 Lead subacetate  
U129 Lindane  
U147 Maleic anhydride  
U148 Maleic hydrazide  
U149 Malonitrile  
U150 Melphalan  
U151 Mercury  
U152 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-  
 U119 Methanesulfonic acid, ethyl ester  
 U211 Methane, tetrachloro-  
 U153 Methanethiol  
 U225 Methane, tribromo-  
 U044 Methane, trichloro-  
 U121 Methane, trichlorofluoro-  
 U123 Methanoic acid  
 U154 Methanol  
 U155 Methapyrilene  
 U142 1,3,4-Metheno-2Hcyclobutal[cd]pentalen-2-one,1,1a,3,3a,4,5,5a,5b,6-  
 decachlorooctahydro-  
 U247 Methoxychlor  
 U154 Methyl alcohol  
 U029 Methyl bromide  
 U186 1-Methylbutadiene  
 U045 Methyl chloride  
 U156 Methylchlorocarbonate  
 U226 Methylchloroform  
 U157 3-Methylcholanthrene  
 U158 4,4'-Methylenebis(2-chloroaniline)  
 U068 Methylene bromide  
 U080 Methylene chloride  
 U159 Methyl ethyl ketone  
 U160 Methyl ethyl ketone peroxide  
 U138 Methyl iodide  
 U161 Methyl isobutyl ketone  
 U162 N-Methyl-N'-nitro-N-nitrosoguanidine  
 U161 4-Methyl-2-pentanone  
 U164 Methylthiouracil  
 U010 Mitomycin C  
 U059 5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy)-alpha-L-  
 Iyxo-hexopyranosyl)oxyl]-7,8,9 10-tetrahydro-6,8,11-trihydroxy-1-methoxy-  
 U165 Naphthalene  
 U047 Naphthalene, 2-chloro-  
 U166 1,4-Naphthalenedione  
 U236 2,7-Naphthatenedisulfonic acid,3,3'-dimethyl-(1,I'-biphenyl)-4,4' diyl]-  
 bis(azo)bis(S-amino-4-hydroxy)-,tetrasodium salt  
 U166 1,4-Naphthoquinone  
 U167 alpha-Naphthylamine  
 U168 beta- Naphthylamine  
 U026 2-Naphthylamine, N,N'-bis(2-chloromethyl)-  
 U167 I-Naphthylenamine  
 U168 2-Naphthylenamine

U217 Nitric acid, thallium(1+) salt  
 U169 Nitrobenzene  
 U170 p-Nitrophenol  
 U171 2-Nitropropane  
 U172 N-Nitrosodi-n-butylamine  
 U173 N-Nitrosodiethanolamine  
 U 174 N-Nitrosodiethylamine  
 U176 N-Nitroso-N-ethylurea  
 U 177 N-Nitroso-N-methylurea  
 U179 N-Nitroso-N-methylurethane  
 U179 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  
 U115 Oxirane  
 U126 Oxiranecarboxyaldehyde  
 U041 Oxirane, (chloromethyl)-  
 U182 Paraldehyde  
 U183 Pentachlorobenzene  
 U184 Pentachloroethane  
 U185 Pentachloronitrobenzene (PCNB)  
 U242 Pentachlorophenol  
 U186 1,3-Pentadiene  
 U187 Phenacetin  
 U188 Phenol  
 U048 Phenol, 2-chloro-  
 U039 Phenol, 4-chloro-3-methyl-  
 U081 Phenol,2,4-dicloro-  
 U082 Phenol,2,6-dichloro-  
 U089 Phenol,4,4'-(1,2-diethyl- 1,2-ethenediyl)bis-, (E)-U101 Phenol,2,4-dimethyl-  
 U052 Phenol, methyl-  
 U132 Phenol,2,2'-methylenebis[ 3,4,6-trichloro-  
 U170 Phenol, 4-nitro-  
 U242 Phenol, Pentachloro-  
 U212 Phenol, 2,3,4,5-tetrachloro  
 U230 Phenol, 2,4,5-trichloro-  
 U231 Phenol,2,4,6-trichloro-  
 U150 L-Phenylalanine,4-[bis(2-chloroethyl)amino]-  
 U145 Phosphoric acid, lead salt  
 U087 Phosphorodithioic acid, O,O-diethyl-,S-methyl-, ester  
 U189 Phosphorous sulfide  
 U190 Phthalic anhydride  
 U191 2-Picoline  
 U179 Piperidine, 1-nitroso-  
 U192 Propamide

U 194 1-Propanamine  
 U111 1-Propanamine, N-nitroso-N-N-propyl-  
 U101 1-Propanamine, N-propyl-  
 U066 Propane, 1,2-dibromo-3-chloro-  
 U149 Propanedinitrile  
 U171 Propane,2,2'-oxybis[2-chloro-  
 U193 1,3-Propane sulfone  
 U235 1-Propanol,2,3-dibromo-, phosphate(3:1)  
 U140 1-Propanol, 2-methyl-  
 U002 2-Propanone  
 U084 1-Propane, 1,3-dichloro-  
 U152 2-Propanenitrile,2-methyl-  
 U007 2-Propenamide  
 U243 1-Propene, hexachloro-  
 U009 2-Propenenitrile  
 U008 2-Propenoic acid  
 U113 2-Propenoic acid, ethyl ester  
 U118 2-Propenioc acid, 2-methyl-, ethyl ester  
 U162 2-Propenoic acid, 2-methyl-, methylester  
 U233 Propionic acid, 2-(2,4,5-trichlorophenoxy)-  
 U194 n-Propylamine  
 U083 Propylene dichloride  
 U148 3,6-Pyridazinedione, 1,2-dihydro-  
 U196 Pyridine  
 U191 Pyridine, 2-methyl-U237 2,4(1 H,3H)-Pyrimidinedine,5-[bis(2-chloroethyl)amino]  
 U164 4-(1 H)-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  
 U015 L-Serine, diazoacetate (ester)  
 U233 Silvex  
 U206 Streptozotocin  
 U103 Sulfuric acid, dimethyl ester  
 U189 Sulfur phosphide  
 U232 2,4,5-T  
 U207 1,2,4,5-Tetrachlorobenzene  
 U208 1,1,1,2-Tetrachloroethane  
 U209 1,1,2,2-Tetrachloroethane  
 U210 Tetrachloroethylene  
 U212 2,3,4,6-Tetrachlorophenol  
 U213 Tetrahydrofuran

U214 Thallium(I) acetate  
U215 Thallium(I) carbonate  
U216 Thallium chloride  
U217 Thallium(I) nitrate  
U218 Thioacetamide  
U153 Thiomethanol  
U244 Thioperoxydicarbonic diamide,tetramethyl-  
U219 Thiourea  
U244 Thiuram  
U220 Toluene  
U221 Toluenediamine  
U223 Toluene diisocyanate  
U328 o-Toluidine  
U353 p-Toluidine  
U222 o-Toluidine hydrochloride  
U011 1H-1,2,4-Triazol-3-amine  
U226 1, 1, 1-Trichloroethane  
U227 1, 1,2-Trichlorethane  
U228 Trichloroethylene  
U121 Trichloromonofluoromethane  
U230 2,4,5-Trichlorophenol  
U231 2,4,6-Trichlorophenol  
U234 sym-Trinitrobenzene  
U182 1,3,5-Trioxane,2,4,6-trimethyl-  
U235 Tris(2,3-dibromopropyl) phosphate  
U236 Trypan blue  
U237 Uracil mustard  
U176 Urea, N-ethyl-N-nitroso-  
U177 Urea, N-methyl-N-nitroso  
U043 Vinyl chloride  
U248 Warfarin, when present in concentrations of 0.3% or less  
U239 Xylene  
U200 Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester  
U249 Zinc phosphide, when present at concentrations of 10% or less

## **DEA Controlled Substances**

### **Summary**

Items identified by the US Department of Justice, Drug Enforcement Administration (DEA) and the Texas Department of Public Safety (DPS) as controlled substances are subject to licensing, registration, storage, security, use and disposal requirements. See a [list of DEA controlled substances](#).

Principal Investigators (PIs) using controlled substances in their laboratory research (including animal research) are subject to state and federal regulatory requirements.

### **Licensing and Registration**

Since the University cannot, by law, maintain a campus wide registration for controlled substances, it is the responsibility of each PI to obtain appropriate licenses and registration, and to adhere to applicable state and federal regulatory requirements when working with controlled substances. PIs must register their controlled substance(s) with the federal DEA as well as the Texas DPS.

1. **State DPS Licensing:** Approved applicants will receive a one-year license to work with controlled substances in a manner consistent with the approved use(s) described in the application.
2. **Federal Registration:** Once you complete your state [DPS Registration](#), you will need to complete a [DEA Controlled Substance registration](#) application. DEA registrations remain active for a 1-year period.
3. **Notification:** Copies of all registration and licensing related correspondence must be kept by the PI and additional copies sent to Department of Risk Management.

The PI shall complete a Controlled Substances Self Evaluation annually. The forms, indicating corrective actions taken, should be kept by the PI for at least one year and a copy should be submitted to Department of Risk Management.

## **Storage and Security Controls**

Controlled substances possessed, kept, or otherwise stored in a manner or location not in compliance with state or federal law are subject to seizure by and forfeiture to federal or state officials. Failure to comply with applicable requirements may also result in a suspension of purchasing privileges and disciplinary actions.

In order to guard against theft or diversion, all controlled substances - regardless of schedule - must be kept under lock and key, and accessible only to authorized personnel. The number of authorized staff must be kept to the minimum essential for operation, and the stocks of controlled substances to the smallest quantity needed.

All controlled substances must be kept locked in their storage location except for the actual time required for authorized staff to remove, legitimately work with, and replace them.

Controlled substances must be stored in a substantially constructed cabinet. This cabinet must be kept locked at all times. The room in which the cabinet is located must have limited access during working hours and provide security after hours.

## Disposal

Controlled substances may only be disposed by returning to a reputable Pharmaceutical return company. Expired material or unused product must be accumulated and stored under lock and key until ready for disposal. Controlled substances injected into research animals, consumed in a reaction, **or irrecoverably** comingled (if part of the research protocol) go into a hazardous waste stream for disposal through the University's routine waste disposal program.

## Reporting of Loss, Destruction, Theft, or Unauthorized Use

Thefts, suspected thefts, unauthorized uses, or other losses of any controlled substance must be reported to the Lamar University Police Department (LUPD) and EHS upon discovery. Registrants must also document the incident to the Texas DPS and federal DEA. See [DEA Theft or Loss of Controlled Substances](#).

## Recordkeeping

PIs are required by law to maintain complete and accurate inventory records for all controlled substances. These records must be kept separately from all other records and documents, in or near the primary work area, and be available for inspection during regular work hours. **The use of codes, symbols, or foreign languages in identifying a controlled substance or person in the record is prohibited.** In the event that any controlled substances are lost, destroyed, or stolen, the kind and quantity of the material and the date of discovery of such loss must be recorded in detail. All records must be maintained by PIs for a period of at least two years from the date of the last recorded transaction.

The recordkeeping system should include the following information:

1. Receipt of Controlled Substance: A separate and current record on the receipt of controlled substances, indicating date received, name and address of supplier, and the type, strength or concentration, and amount of the controlled substances received. Each record must be signed by the person receiving the controlled substance.



2. Use of Controlled Substances: A separate and current record for the storage and use of each controlled substance, indicating the date, laboratory building and room, specific research experiment, controlled substance's application in the research, and type, strength and quantity of each controlled substance use or disposal. By noting starting volume or mass of substance in the container, each use or disposal is a subtraction from the starting quantity, and the running (decreasing) amount should equal the total amount remaining on-hand. Each record of use must be signed by the person working with the controlled substance.
3. Inventory of Controlled Substances: A complete and accurate inventory of the stock of controlled substances within each registrant's laboratory must be performed initially. The type, strength, and quantity of all controlled substances must be recorded at this time. The person conducting the inventory must also date and sign the record. After the initial inventory is taken, a new inventory of all stocks of controlled substances on hand should be conducted at least every two years. PIs should be sure that the inventory can be reconciled to the records of receipt, use and disposal at all times.

Note: the guidance information above is not intended to cover all applicable parts of the DEA and DPS rules. For further information on the requirements for controlled substances review the DEA and DPS websites.