



UNIVERSITY *of* HOUSTON

Hazardous Waste Program Manual

*Instructions for the Disposal of Chemical, Radioactive,
and Biohazard Waste*



Environmental Health and Risk Management Department

January 2005

TABLE OF CONTENTS

PREFACE	2
HELPFUL TELEPHONE NUMBERS AND CONTACT INFORMATION	3
1.0 RESPONSIBILITIES OF COLLEGES AND DEPARTMENTS	4
2.0 HAZARDOUS WASTE TRAINING REQUIREMENTS	5
3.0 DISPOSAL OF CHEMICAL WASTES	6
3.1 Identification of Hazardous Waste	6
3.2 Waste Minimization	7
3.3 On-site Treatment and Disposal	7
3.4 Storage of Hazardous Waste	7
3.5 Procedures for Introducing Waste into the UH Hazardous Waste Program	8
3.6 Segregation of Solvent Waste.....	13
3.7 Special Notes to Hazardous Waste Generators	13
4.0 DISPOSAL OF BIOHAZARDOUS WASTE.....	15
5.0 DISPOSAL OF RADIOACTIVE WASTES.....	16
6.0 GUIDELINES FOR DISPOSAL OF NON-HAZARDOUS WASTE	17
7.0 EMERGENCY RESPONSE TO HAZARDOUS WASTE SPILLS.....	19
APPENDIX A - Identification of Hazardous Chemical Waste.....	20
APPENDIX B - Examples of Potentially Incompatible Wastes.....	48
APPENDIX C - Common Halogenated and Non-Halogenated Organic Solvents.....	50

PREFACE

Environmental awareness and protection of our natural resources has become a national priority for the past decade. As a nation, we have come to recognize that hazardous agents of all types have entered our environment through improper use and disposal. In response to the national concern for proper management of waste materials, Congress passed the Resource Conservation and Recovery Act (RCRA) in 1976. Under this act, the Environmental Protection Agency (EPA) was given the responsibility for regulating hazardous chemical wastes. In Texas, the Texas Commission on Environmental Quality (TCEQ) controls hazardous chemical wastes, while radioactive and biological wastes are regulated by the Texas Department of Health.

The University of Houston (UH) produces a significant amount of hazardous waste in performing its functions of service, teaching, and research. Since the university generates more than 1,000 kilograms of hazardous chemical waste per month, it is classified by the Environmental Protection Agency as a "large quantity generator". As such we are required to comply with the full extent of the hazardous chemical waste regulations. In addition, we are subject to regulations promulgated for the control of radioactive and biological wastes.

The Environmental Health and Risk Management Department (EHRM) is charged with the responsibility for ensuring that hazardous waste generated on campus is disposed of in accordance with all applicable regulations. The function of the EHRM Hazardous Waste Coordinator is to assist faculty, staff and students with their responsibility for managing all wastes properly and cost-effectively. EHRM coordinates all hazardous waste efforts for the university including pick-up from various UH laboratories, record keeping, and disposal through environmentally and financially sound waste contractors.

Hazardous wastes are collected by EHRM on request. The waste is transported to the waste facility on the main campus. In accordance with sound environmental management practices, the university employs separate handling practices for radioactive, chemical, and biological wastes.

The University of Houston requires that all members of the campus who directly generate hazardous wastes are trained in the procedures for proper handling of these wastes. The EHRM periodically offers a hazardous materials training class, which includes Hazard Communication, Hazardous Waste procedures, Lab Safety and General Fire Safety. Please consult our website for the most current training schedule. This manual explains the requirements of the University of Houston Hazardous Waste Program and describes the proper procedures for preparing hazardous waste for pick-up as regulated under the law.

Please contact EHRM for additional information and help regarding your hazardous waste (713) 743-5858 or visit our web site at www.uh.edu/plantops/ehrm/. The cooperation of every member of the University of Houston is essential.

HELPFUL TELEPHONE NUMBERS AND CONTACT INFORMATION

Environmental Health and Risk Management Department (713) 743-5858
Fax (713) 743-8035

Hazardous Waste Coordinator (713) 743-5863

University Health Center (713) 743-5151

University of Houston Police Department (713) 743-3333

- EHRM office hours: Monday through Friday 8:00 a.m. – 5:00 p.m.
- For waste pick up, fill an Online Hazardous Waste Pickup Request Form at www.uh.edu/plantops/ehrm.
- For inquires, call EHRM during business hours, after normal office hours you may leave pertinent information on the EHRM telephone mail system.
- After hours chemical, biological, or radioactive materials emergency contact the University of Houston Police Department. The Environmental Health and Risk Management Department maintains an on-call mechanism to provide expertise in the event of an after hours situation requiring assistance.

1.0 RESPONSIBILITIES OF COLLEGES AND DEPARTMENTS

Each college and department within the university must assure that personnel who generate hazardous wastes have received training in the use of the University of Houston hazardous waste handling program and are complying with university policy regarding waste management. Special sessions can be arranged for specific departments if requested.

When graduate students, faculty, or staff members complete their work and prepare to leave the University, arrangements for the proper disposal of any remaining waste must be made prior to His/Her departure.

••• COMPLIANCE CAUTION •••

FEDERAL AND TEXAS LAW STIPULATES THAT EACH INDIVIDUAL WHO GENERATES HAZARDOUS WASTE IS PERSONALLY LIABLE AND IS RESPONSIBLE FOR ASSURING COMPLIANCE WITH REGULATIONS AND PROPER HAZARDOUS WASTE MANAGEMENT.

2.0 HAZARDOUS WASTE TRAINING REQUIREMENTS

All individuals who may generate hazardous chemical, biological, or radioactive waste must receive documented training, according to University of Houston policy, EPA and the Texas Commission on Environmental Quality. The EHRM presents Hazardous Materials Orientation Training seminars, which include UH hazardous waste procedures, multiple times during the year.

Attendance at one of these seminars is required for all new employees (faculty, teaching assistants, staff etc.) to the university that use hazardous materials and in so doing, generate hazardous waste.

Students under the direction and/or supervision of a qualified individual (i.e. Principal Investigator, Teaching Assistant etc.) are not required to document hazardous waste training; however they are welcome to attend.

The EHRM strongly recommends that individuals periodically attend subsequent training seminars to be aware of changes in regulations

To meet regulatory requirements and as a service to departments, faculty and staff, the hazardous waste office of EHRM keeps training records on all individuals who have attended our training seminars.

If you have a question with regards to your training record, please contact EHRM.

3.0 DISPOSAL OF CHEMICAL WASTES

Individual users of hazardous materials have specific duties and responsibilities under state and federal law and university policy regarding hazardous waste handling and disposal. These responsibilities include hazardous waste identification and waste minimization as well as proper waste storage and disposal.

3.1 Identification of Hazardous Waste

Each generator of chemical waste must determine if the waste is "hazardous" by considering the characteristics and the chemical composition of the waste. State law defines specific categories of hazardous waste. If the waste generated fits under any one of the given classifications, it must be handled through the hazardous waste disposal program. If the material cannot be identified by either prior knowledge of the process that produced it, or by a proper label, it must be analyzed. The cost of analysis is the responsibility of the department that generated the waste.

Ignitable Waste

Any waste product that has a flash point of less than 140 degrees Fahrenheit is considered an ignitable (flammable) hazardous waste. This determination is best made by consulting reference texts that describe physical properties of the waste.

Corrosive Waste

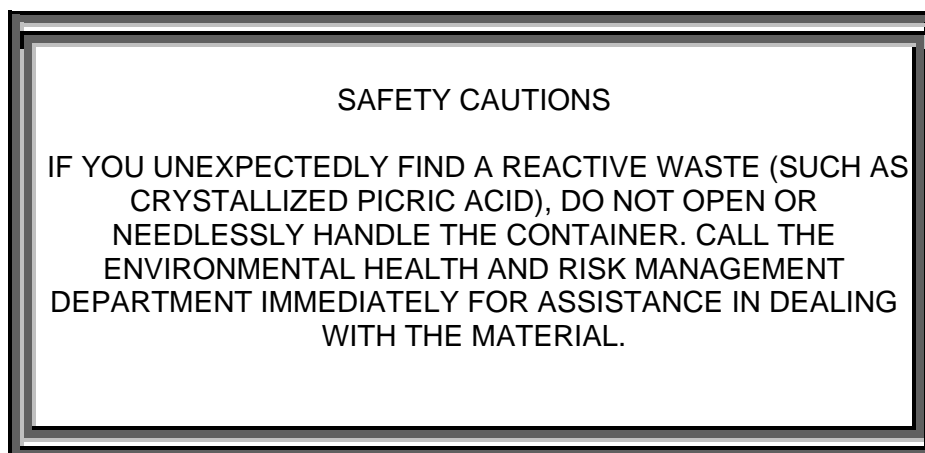
Any liquid waste with a pH of less than 2 or greater than 12.5 is considered a corrosive hazardous waste. The waste may continue to be hazardous, based on other characteristics, even if the pH is adjusted to within these limits. No solution may be discharged to the sanitary sewer system unless the pH is in between 6 to 9.

Reactive Waste

Any sulfides or cyanides bearing waste, any waste that is explosive or pyrophoric, or any waste that can combine violently with air or water to produce heat, light or toxic products is considered a reactive waste.

These wastes require special handling if they are shock sensitive or if they exhibit other particular characteristics. Common examples of potentially shock sensitive materials include crystallized picric acid, opened ether older than six months, or ether in a container, which has deteriorated.

The EHRM must be notified of such special characteristics of reactive waste prior to scheduled pick-up.



Toxic Waste (As defined by Toxicity Characteristic Leaching Procedure TCLP)

Waste products are generally considered toxic if they have adverse effects on organisms in relatively low doses or small quantities. The EPA has published lists of toxic and acutely toxic waste, as well as wastes that could enter the environment through leaching (See Appendix A). If a waste is considered toxic under any of these criteria, it must be handled through the hazardous waste disposal program.

3.2 Waste Minimization

Once an individual has determined that hazardous waste is being produced, options for disposal must be considered. As part of the University agreement with the State of Texas, we must make significant efforts to minimize the amount of waste produced. Therefore, each individual generator is urged to consider if his/her waste material could be used by another person or department. Containers of chemicals that are unopened or largely unused can fall into this category.

3.3 On-site Treatment and Disposal

There is a general prohibition against on-site treatment and disposal of hazardous waste without a permit. The University of Houston is not currently permitted for on-site treatment or disposal of hazardous wastes.

3.4 Storage of Hazardous Waste

The Texas Commission on Environmental Quality considers each room or laboratory on campus where hazardous wastes are stored as a "satellite accumulation area". As such, the following requirements apply:

1. Wastes must be in containers made of materials compatible with the contents. Wastes must be compatible with other wastes and hazardous materials in the area. Incompatible wastes such as strong acids and strong bases must be segregated.
2. The container must be in good condition and must be closed except when adding or removing waste. (Evaporating solvent waste from an open bottle of waste inside fume hoods is not an acceptable practice.)
3. The label "Hazardous Waste" and the date when accumulation of the waste began must be clearly visible. In addition, the waste must be labeled with the description of the chemical contents and the name of the responsible person. For example, a label that is marked "Organic Waste" is not good enough. The label must note the specific chemicals and their concentration for each bottle or can of the material.
4. No more than 55 gallons of a hazardous waste or one quart of an acutely hazardous waste (P-Listed, see Appendix A) may be stored in any satellite accumulation area at anytime, equivalent to 55 4-Liter bottles.
5. Room numbers or other identification of all locations where hazardous wastes are stored in each building must be registered with EHRM and must meet all of the requirements for satellite accumulation areas.
6. The storage areas must be secured to prevent inadvertent access; that is, doors to waste areas should be kept locked when unattended.
7. Each satellite accumulation area must be inspected weekly by the individual responsible for that site to check for container deterioration, container leaks, proper labeling and that wastes stored together are compatible with each other. A small spiral notebook in the satellite accumulation area can be used to record the results of weekly inspections.

3.5 Procedures for Introducing Waste into the UH Hazardous Waste Program

Overview

Hazardous waste must be handled through the EHRM hazardous waste program once the generator has determined that it cannot be recycled or reused on-site. The UH Online Hazardous Waste Pickup Request Form is used by the EHRM for removing and safely handling the waste. The form and the instructions are available online from the EHRM Office website. [Click here](#) to direct you to the Hazardous Waste Pickup Request Form

After requesting a waste pick-up, EHRM personnel will attempt to pick up the waste within three business days of the request. All waste must be properly labeled. Container labels must match the information, which appears on the Hazardous Waste Pickup Request Form. All chemicals listed on the form are checked to see if they correspond with the waste labels. Each form is also checked to be sure that all of the required information is present. Only individuals who have attended the EHRM

Hazardous Waste Orientation class may submit a Hazardous Waste Pickup Request Form.

The waste must be packed in sturdy containers weighing no more than 50 pounds. Containers must be in good condition and compatible with the chemicals they contain. EHRM will not accept containers, which are damaged or show evidence of leakage. Individual waste bottles or cans in the container must be packed with crumpled newspaper (Styrofoam peanuts are not acceptable) to prevent breakage and to protect them during transport.

Step-By-Step Instructions

BEFORE REQUESTING A HAZARDOUS WASTE PICK UP

1. Determine if you can reuse or recycle this waste in your laboratory. If so, there is no need to dispose of the material through the UH Hazardous Waste Program pickup procedures.
2. If you have unopened or uncontaminated containers in a usable form, you should attempt to find another user. This will avoid the cost of disposal, the environmental impact of disposal, and needless cost to another user incurred through the purchase of new chemicals. EHRM operates a chemical exchange program called CHEM-SWAP expressly to aid in the exchange of useable chemicals. For more information contact EHRM.
3. Separate solids and liquids. All liquids must be free of solid material and or sludge to facilitate consolidation, recycling and proper disposal. If solids cannot be separated from liquids, the identification and quantity of the solid component must be listed on the UH Hazardous Waste Pickup Request Form. Every effort should be made to separate solids and liquids.
4. Consolidate similar wastes. Effort should be made by the waste generator to consolidate same-type waste into as few containers as possible.
5. Properly package the waste. Make sure containers are compatible with the material inside and if not, perform a transfer to a new container. Containers must be leak free, have a tight cap, and be clean on the outside. Stoppers and corks will not do. Containers must be no more than 90% full.
6. Label all hazardous waste containers with the hazardous waste labels. Information on the containers must agree with the information on the UH Hazardous Waste Pickup Request Form. Do not use abbreviations for chemical names.
7. Prepare the waste containers for pick-up and transport. Waste is transported with other waste shipments and so must be protected from the potential hazards of that process. All containers must be visible within the packing, and accessible to EHRM personnel for labeling purposes. Accordingly, do not completely cover waste containers and do not tape boxes shut. Packed boxes must be of a size and weight which one person can carry (50 pounds or less). Five-gallon cans and

strong plastic containers need not be boxed. Please note that plastic milk jugs are not acceptable for the transport of hazardous substances.

8. Anticipate a slight lag time between your request to EHRM for a waste pick-up and the actual time and date an EHRM staff member actually arrives to remove the materials. Staff vacancies, sickness, changing priorities, and incidents can all adversely impact the waste program pick-up schedule.

FILLING OUT THE UH HAZARDOUS WASTE PICKUP REQUEST FORM

Complete each of the sections of the waste form with the information requested. Note any special information requirements, explained below where necessary:

1. Waste Labeled and Properly Package

Check the correct box.

2. Requestor

The person who is submitting the actual waste form.

3. Extension (EXT)

This is the extension or telephone number you can be reached at, if we should have questions.

4. Building

Type the building name. Example: Fleming Building.

5. Room number

The room number where the waste is stored.

6. Principal Investigator

The person whose research or lab produced the waste.

7. Department

Indicate the department where the principal investigator works in. Example: Chemistry department.

8. Waste Category

Check the appropriate waste type box.

9. Identification/Description of Waste Chemicals

State whether the waste is a mixture and list all waste components using their common chemical or IUPAC names.

Estimate and indicate the volume (liquids) or weight (solids) each represents in the container.

Please use metric units. *Example:* grams, kilograms, liters, milliliters.

Do not use chemical name abbreviations or formulas. However, you can include abbreviations on the form if they provide additional information.

The identification and quantity of any solids present in liquid waste must also be listed if such solids/sludge cannot be separated.

Example 1: Do not type "aqueous lead waste", instead type "1000 ppm lead nitrate in dilute nitric acid".

Example 2: If several chemicals have been poured in one container list the volume or weight of each component as follows: Acetone-1L, Hexane- 500 ml, Methanol- 250 ml.

Example 3: If a trade name such as "Datagraphix First Developer, Auto 2" is all the information available, refer to the products Material Safety Data Sheet (MSDS) for hazardous constituent information as well as any special disposal instructions. If you are unsure how to properly name the waste, email an electronic copy of the MSDS to the EHRM Waste Coordinator after submitting the UH Hazardous Waste Pickup Request Form. An MSDS can be obtained from the manufacturer listed on the bottle or can of the substance.

Example 4: Do not type common names such as "Zilkens Solution" on the waste form. List all components by their specific, non-abbreviated, chemical name.

Example 5: Do not list "AgNO₃"; rather, type the complete chemical name, silver nitrate.

10. Solid Liquid Gas

Check the appropriate letter to indicate the present physical state of the waste. Choose "S" for solid, "L" for liquid, and "G" for Gas or "LSV" for Liquid Scintillation Vials if the waste pertains to radiation.

11. Number, Size, & Type of Container(s)

Identify the number, size and type of containers.

Example 6: If you had 20 containers of waste Hexane in 4 liter bottles, your entry would be: 20 x 4 liter bottles.

Example 7: If you had 5 gallons of Methylene chloride and 10 gallons of a mixture of Trichloroethane and Acetone, both in 5-gallon metal cans, your entry would be separate for each chemical or mixture. For the Methylene chloride you would enter: 1 x 5 gal. For the mixture of Trichloroethane and Acetone you would enter in the next box down: 2 x 5 gal cans.

Example 8: If you had 3 separate containers of Sodium hydroxide, each of a different size or type, they should be listed on separate lines of the form. For example the first box might read, 1 x 4 L bottle. The second box would read, 1 x 100 g can, and the third would read, 1 x 500 ml bottle.

Example 9: If you have broken thermometers collected in a 4 liter bottle or any other unusual item or container, list the number, size and type of container and make a special note of the unusual item or container in the box below under Waste Notes and/or Handling Instructions.

12. Volume or Weight per Container

Indicate the total volume or weight of each container. Differing sizes of containers should be listed on separate lines of the form.

Example 10: If you had 5 bottles of liquid Potassium chloride in the same size containers, each containing 400 milliliters, the entry would be: 400 ml. in ea.

Example 11: If you had 2 bottles of solid Barium chloride, one containing 100 grams and the other containing 500 grams, they would be listed in separate boxes. The first box would read, 100 g. The second box would read, 500 g.

Example 12: If you had two containers of Calcium hydroxide, one liquid and one solid, they would be listed in separate boxes also.

Example 13: If you have a container with liquid and solids in it, every effort should be made to separate the two. If this cannot be done, list the amount of solid and volume of liquid in the same box for that particular container.

13. Waste Notes and/or Special Handling Instructions

Note any location access restrictions or any special hazards associated with the wastes.

14. RAD Waste Replacements

Indicate the number of Radiation Bags, Carboys and Sharp Tubes needed for replacement.

15. Biological Waste Bag Replacement

Indicate the number of Biological Waste Bags needed for replacement.

16. Preferred Pickup Day

Currently, EHRM waste pickups are scheduled weekly on Tuesdays and Thursdays, 8:00 am to 5:00 pm, during normal University business hours. Allow a minimum of twenty-four hours (24 hrs) after submitting a Hazardous Waste Pickup Request Form, for EHRM personnel to attempt the waste pick-up. There is no same day waste pick-up.

Hazardous Waste Pickup Request Form

[Click here](#) to direct you to the Hazardous Waste Pickup Request Form

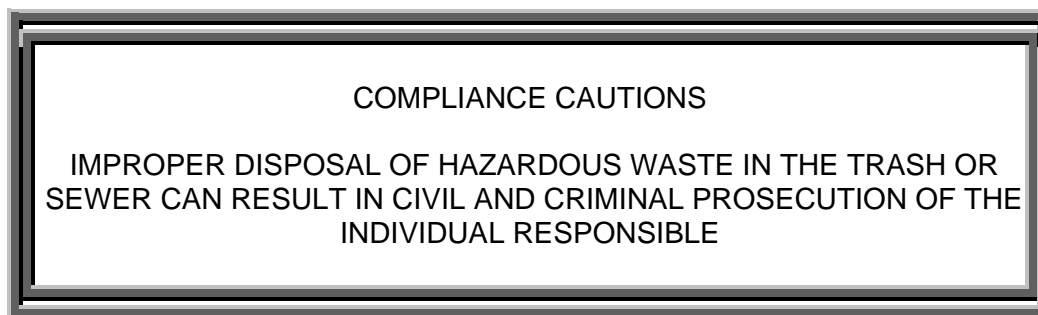
3.6 Segregation of Solvent Waste

Generally solvent waste is consolidated into 55-gallon drums at the hazardous Waste Facility. Halogenated solvents (containing chlorine, bromine etc.) are normally consolidated separately from non-halogenated solvents, as it is usually more expensive to dispose of halogenated solvents.

It is essential that the individual generators of solvent waste segregate these wastes and label them accurately so that this consolidation can be done properly. Just a small amount of a halogenated solvent in a non-halogenated drum can result in a significantly greater cost for disposal of the entire drum. Common halogenated and non-halogenated organic solvents are listed in Appendix D of this manual.

3.7 Special Notes to Hazardous Waste Generators

1. Identification: The safety of the personnel who pick up and handle the hazardous waste is dependent on their training in handling chemicals, explosives and other hazardous materials. Their ability to use this training effectively is in turn dependent on a complete and accurate label attached to each waste container. The safe handling of waste requires proper packaging identification for pick-up. Please label and package your waste as thoroughly as possible. Failure to do so may result in the refusal to accept the waste into the University of Houston program.



2. The sanitary sewer system at the university may be monitored for hazardous waste constituents.

3. Time Limits: No facility on campus is allowed to accumulate more than 55 gallons of hazardous waste or one quart of acutely hazardous waste in at one time. Laboratory areas are further restricted by the Fire Code as to the maximum quantity of total "flammable/combustible" material that may be stored there.
4. It is important to plan ahead for the disposal of hazardous waste.

4.0 DSIPOSAL OF BIOHAZARDOUS WASTE

The Environmental Health and Risk Management Department runs the biological waste program for the campus. All biological waste should be autoclaved and/or rendered inactive prior to pickup by EHRM. All biological waste must be placed in an orange or red bag with the biohazard symbol or in a designated biological sharps container. If you have any questions or need further information, please contact the EHRM Biological Safety Manager.

To request a biological waste pickup, go to the online Hazardous Waste Pickup Request form and select biological waste as the waste category.

NEEDLES, SCALPELS AND RAZOR BLADES, BROKEN GLASS

All sharp, contaminated objects should be placed in an approved puncture resistant "sharps" container. This container should have securely capped ends or a closable top or lid.

CONTAMINATED ANIMAL CARCASSES:

Animal carcasses containing known biohazard agents should be incinerated. Contact the Director of Animal Care for further information.

5.0 DISPOSAL OF RADIOACTIVE WASTES

Refer to EHRM website at www.uh.edu/plantops/ehrm/ for inquiries or contact the EHRM office at (713) 743-5858.

6.0 GUIDELINES FOR DISPOSAL OF NON-HAZARDOUS WASTE

••• COMPLIANCE CAUTION •••

HAZARDOUS CHEMICALS SHOULD NOT BE PUT IN DUMPSTERS

Not all laboratory wastes are hazardous and so should not be entered into the UH hazardous waste program. The following guidelines for determining which non-hazardous laboratory wastes are suitable for disposal through normal waste channels were developed after careful review of TCEQ

1. No wastes, which are defined as hazardous by EPA, may be placed in the dumpsters. See Appendix A for a complete listing of such wastes.
2. Liquid waste (i.e. bottles of unused or partially used solutions) may not be disposed of to the dumpsters, as liquid wastes are not permitted at the municipal landfill.
3. Empty containers of waste commercial products or chemicals are acceptable if no freestanding liquids remain in the containers and all disposal requirements noted on the label are complied with. Pesticide containers or those which contained acutely hazardous materials must be triple rinsed and the rinse water collected for disposal as hazardous waste. Empty containers must be perforated on both ends and/or crushed, and the container label defaced or otherwise marked to indicate the container no longer contains hazardous materials.
4. Animal wastes containing formaldehyde are not acceptable in dumpsters; carcasses may be incinerated by Animal Care Operations, and the liquid (i.e. formalin) disposed of as hazardous waste.
5. Uncontaminated and non-infectious animal wastes can be disposed to the landfill under certain conditions:
 - a. Rats, mice and other small research animals may be placed in the dumpster if they are double bagged. Because of landfill constraints, no more than approximately 30 pounds of animals may be placed in any single dumpster.
 - b. Small quantities (less than one gallon) of feces and urine of non-human origin may be placed in the dumpster. Such wastes must be double-bagged and packed with sufficient absorbent material (such as kitty litter or oil dry) to ensure no free flowing liquid is present.
6. Certain solid, non-hazardous chemicals are suitable for disposal to the sanitary landfill. However, such chemicals should not be placed in laboratory trash containers as custodial personnel have been instructed not to handle any chemical wastes. Non-hazardous solids should be placed directly into the dumpsters.
7. The following types of solid laboratory wastes, which are generally considered non-hazardous, or of low toxicity and so may be put directly in the dumpsters. As noted above, solutions of such wastes should not be put in the dumpster. For quantities greater than 5 pounds, contact EHRM.

a. *Organic chemicals:*

Sugars and starches

Naturally occurring a-amino acids and salts

Citric acid and its Na, K, Mg, Ca, NH₄ salts

Lactic acid and its Na, K, Mg, Ca, NH₄ salts

b. *Inorganic chemicals*

Sulfates: Na, K, Mg, Ca, Sr, NH₄

Phosphates: Na, K, Mg, Ca, Sr, NH₄

Carbonates: Na, K, Mg, Ca, Sr, NH₄

Oxides: B, Mg, Ca, Sr, Al, Si, Ti, Mn, Fe, Co, Cu, Zn

Chlorides: Na, K, Mg

Fluorides: Ca

Borates: Na, K, Mg, Ca

8. Non-hazardous gases (e.g. carbon dioxide, nitrogen, argon, neon) may generally be vented to the atmosphere via a certified and functioning laboratory fume hood. Please check with EHRM prior to such venting, particularly for large volumes. While many such gases are not toxic, if vented at a rate greater than the removal rate of the fume hood, an asphyxiant hazard could be created in the laboratory.

9. If there is any question as to whether a waste is acceptable for land filling, please contact the EHRM.

7.0 EMERGENCY RESPONSE TO HAZARDOUS WASTE SPILLS

It is the responsibility of each individual using hazardous material to become familiar with the emergency response procedures, if any, which govern his or her facility.

The following general rules should be followed in the event of a major (i.e. greater than 5 gallons of a typical solvent; much less for more toxic materials) hazardous materials spill or other emergency.

1. ACTIVATE FIRE ALARM, IF NECESSARY, FOR THE BUILDING

Be familiar with the sound of the alarm system in your facility. If the incident could threaten the health of individuals in the building activate the alarm.

2. CALL FOR HELP, AND CALL THE UNIVERSITY POLICE, IF NECESSARY, 911

Get as much information as you can about the chemical. If possible, locate a Material Safety Data Sheet (MSDS). Be sure the UH police have been accurately informed as to the nature and location of the spill, and whether there are injuries requiring the assistance of an ambulance. UH police will contact the Environmental Health and Risk Management Department.

3. ATTEND TO LIFE-THREATENING INJURIES

The primary concern in the event of an emergency is to protect life

4. PREVENT ACCESS TO THE AREA

Barricades of some sort should be set up to prevent inadvertent access to the area of the spill. This action may be necessary to prevent injury and to control the spread of contamination.

5. CONTAIN THE SPILL TO PREVENT RELEASE TO THE ENVIRONMENT

If the spill can be safely contained, prevent release to the sanitary sewer system, the storm sewer, and/or the ground. Do not jeopardize your own safety.

6. INITIATE MATERIAL SPECIFIC CLEAN-UP PROCEDURES

The Environmental Health and Risk Management Department will assist in spill clean up. However, accountability for the spill and disposal of spill residue belongs to the individual or department.

APPENDIX A - Identification of Hazardous Chemical Waste

All generators of waste materials are required to determine whether their waste is a "hazardous waste". Two methods to make this determination are outlined in Environmental Protection Agency (EPA) regulations, found in 40 CFR Part 261. The first method of identification requires the generator to check the waste against prescribed lists of hazardous waste compiled by the EPA, while the second method examines the characteristics of the generator's waste for hazardous properties.

Through the first method of identification, waste materials or mixtures specifically listed in EPA regulations have been determined by the Agency to be hazardous and, thus, are subject to regulation. The EPA lists cover the following materials: 1) industrial process wastes from non-specific sources. (Identified in F-list) wastes from specific sources (Identified in K-List) wastes from discarded commercial chemical products, off-specification chemicals, container residues, and residues from spills (Identified in the P and U lists).

The second means by which a waste is classified as hazardous is by possessing one or more of the following hazardous characteristics: ignitability (§261.21), corrosivity (§261.22), reactivity (§261.23), or toxicity (§261.24). Refer to Section III of this manual, or to the original regulations cited, for additional description of these categories.

All EPA waste lists are included in this manual. Table 1 indicates test parameters to identify those wastes possessing hazardous characteristics of ignitability, corrosiveness, and reactivity. Table 2 defines contaminant concentrations for wastes with toxic constituents, and therefore considered characteristic toxic wastes. Table 3 excerpts certain wastes from non-specific sources, and Table 4 includes wastes from discarded commercial products, off-specification chemicals, container residues, and spills. Tables 5 and 6 include off specification and discarded chemical products.

All EPA lists are revised periodically, and so the listings reproduced here should not be relied upon completely. Environmental Health and Risk Management Department will always have the most current waste listings should you desire them.

40 CFR 261 refers to title 40 of the United States Code of Federal Regulations, part 261. Title 40 contains all Environmental Protection Agency rules, and is available for study in the M.D. Anderson Library.

Certain wastes are excluded automatically from regulation as a hazardous waste. These materials include domestic sewage, some solid wastes such as agricultural wastes, animal wastes, and wastes from combustion of coal and other fossil fuels.

Also excluded from regulation are certain materials that are intended for recycling by the generator. At the University of Houston, items falling into this category include those materials that are no longer needed or wanted by a given laboratory, but which may still have value to others on campus. These chemicals are handled through the UH "CHEMSWAP" program. CHEMSWAP is a chemical recycling program administered by Environmental Health and Risk Management Department to make unwanted reagents and chemicals available to others who may have a need for them. Contact EHRM for further information on the CHEM-SWAP program.

TABLE 1: CHARACTERISTIC HAZARDOUS WASTES	
EPA Number	
D001	<p><i>Ignitable waste</i> - A solid exhibits the characteristic of ignitability if representative sample of the waste has any of the following properties:</p> <p>(1) It is a liquid, other than an aqueous solution containing less than 24 % alcohol by volume and has a flash point less than 60 C (140 F), as determined by 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.</p> <p>(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.</p> <p>(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.</p>
D002	<p><i>Corrosive waste</i> - A solid waste exhibits the characteristic of corrosivity if a representative sample of the waste has either of the following properties:</p> <p>(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.</p> <p>(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a temperature of 55 C (130 F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 or equivalent test method approved by the Administrator under the procedures set forth in 40 CFR Part 260.</p>
D003	<p><i>Reactive waste</i> - A solid waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:</p> <p>(1) It is normally unstable and readily undergoes violent changes without detonating.</p> <p>(2) It reacts violently with water.</p> <p>(3) It forms potentially explosive mixtures with water.</p> <p>(4) When mixed with water, it generates toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.</p> <p>(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.</p> <p>(6) It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.</p> <p>(7) It is capable of detonation or explosive decomposition or reaction at standard temperature and pressure.</p> <p>(8) It is a forbidden explosive, a Class A explosive, or a Class B explosive as defined in 49 CFR Part 173.</p>

TABLE 2: MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC ("TCLP" WASTES)

Toxic (TCLP) Waste - A solid waste exhibits the characteristics of a TCLP waste (Toxicity Characteristic Leaching Procedure) if, using the test methods described in Environmental Protection Agency regulation 40 CFR Part 261, Appendix II, the extract from a representative sample of the waste contains any of the contaminants listed below at a concentration equal to or greater than the respective value given. TCLP was previously known as EP toxicity (Extraction Procedure).

EPA HAZARDOUS WASTE NUMBER	CONTAMINANTS	MAXIMUM CONCENTRATION (MILLIGRAMS PER LITER)
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin (1,2,3,4,10,10-hexachloro-1,7, epoxy-1,4,4a,5,6,7,8,8a-octahydro 1,4-endo, (endo-5,8-dimethano-naphthalene)	0.02
D013	Lindane(1, 2, 3, 4, 5, 6-hexa-chlorocyclohexane, gamma isomer)	0.4
D014	Methoxychlor(1,1,1-Trichloro-2,2-bis <p-methoxyphenyl>Ethane)	10.0
D015	Toxaphene(Technical chlorinated camphene)	0.5
D016	2,4-D (2,4-dichlorophenoxyacetic acid)	10.0
D017	2,4,5-TPSilvex(2,4,5-trichlorophen-oxypropionic acid)	1.0
D018	Benzene	0.5
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D023	o-Cresol	200.0*
D024	m-Cresol	200.0*
D025	p-Cresol	200.0*
D026	Cresol	200.0*
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13**
D031	Heptachlor (and it's epoxides)	0.008
D032	Hexachlorobenzene	0.13**
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	200.0
D037	Pentachlorophenol	100.0

D038	Pyridine	5.0**
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl chloride	0.2

** If o-, m-, and p-Cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 mg/l.*

*** Quantitation limit is greater than the calculated regulatory level. The quantitation limit therefore becomes the regulatory limit.*

TABLE 3: HAZARDOUS WASTE GENERATED FROM NON-SPECIFIC SOURCES

Industry and EPA Hazard Waste No.	Hazard code	Hazardous waste
Generic:		
F001	T	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.
F002	T	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 F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F003.	I*	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
F004	T	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.
F005	I, T	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.
F006.	T	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
F007	R, T	Spent cyanide plating bath solutions from electroplating operations.
F008	R, T	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009	R, T	Spent stripping and cleaning bath solutions from electroplating

		operations where cyanides are used in the process.
F010	R, T	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.
F011	R, T	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.
F012	T	Quenching waste water treatment sludge from metal heat treating operations where cyanides are used in the process.
F019	T	Wastewater treatment sludge from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.
F020	H	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).
F021	H	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.
F022	H	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.
F023	H	Wastes (except 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).
F024	T	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 Sec. 261.31 or Sec. 261.32).
F025	T	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.
F026	H	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.
F027	H	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).

F028	T	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.
F032	T	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 Sec. 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.
F034	T	Wastewaters (except those that have not come into contact with processcontaminants), 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.
F035	T	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.
F037	T	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 oil 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 storm water 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 Sec. 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 Sec. 261.4(a)(12)(i), if those residuals are to be disposed of.
F038	T	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 Sec. 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.
F039	T	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.).

TABLE 4: HAZARDOUS WASTE GENERATED FROM SPECIFIC SOURCES		
Industry and EPA Hazard Waste No.	Hazard code	Hazardous waste
Wood preservation:		
K001	T	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.
Inorganic pigments:		
K002	T	Waste water treatment sludge from the production of chrome yellow and orange pigments.
K003	T	Waste water treatment sludge from the production of molybdate orange pigments.
K004	T	Waste water treatment sludge from the production of zinc yellow pigments.
K005	T	Wastewater treatment sludge from the production of chrome green pigments.
K006	T	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007	T	Wastewater treatment sludge from the production of iron blue pigments.
K00	T	Oven residue from the production of chrome oxide green pigments.
Organic chemicals:		
K009	T	Distillation bottoms from the production of acetaldehyde from ethylene.
K010	T	Distillation side cuts from the production of acetaldehyde from ethylene.
K011	R, T	Bottom stream from the wastewater stripper in the production of acrylonitrile.
K013	R, T	Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014	T	Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015	T	Still bottoms from the distillation of benzyl chloride.
K016	T	Heavy ends or distillation residues from the production of carbon tetrachloride.
K017	T	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.
K018	T	Heavy ends from the fractionation column in ethyl chloride production.
K019	T	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K020	T	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.
K021	T	Aqueous spent antimony catalyst waste from fluoromethanes production.
K022	T	Distillation bottom tars from the production of phenol/acetone from cumene.
K02	T	Distillation light ends from the production of phthalic anhydride from naphthalene.
K024	T	Distillation bottoms from the production of phthalic anhydride from naphthalene.
K025	T	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.
K026	T	Stripping still tails from the production of methy ethyl pyridines.
K027	R, T	Centrifuge and distillation residues from toluene diisocyanate production.

K028	T	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.
K029	T	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.
K030	T	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.
K083	T	Distillation bottoms from aniline production.
K085	T	Distillation or fractionation column bottoms from the production of chlorobenzenes.
K093	T	Distillation light ends from the production of phthalic anhydride from ortho-xylene.
K094	T	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.
K095	T	Distillation bottoms from the production of 1,1,1-trichloroethane.
K096	T	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.
K103	T	Process residues from aniline extraction from the production of aniline.
K104	T	Combined wastewater streams generated from nitrobenzene/aniline production.
K105	T	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.
K107	C, T	Column bottoms from product separation from the production of 1,1-dimethyl-hydrazine (UDMH) from carboxylic acid hydrazines.
K108	I, T	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K109	T	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K110	T	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K111	C, T	Product wash waters from the production of dinitrotoluene via nitration of toluene.
K112	T	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.
K113	T	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.
K114	T	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.
K115	T	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.
K116	T	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.
K117	T	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.
K118	T	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.
K136	T	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.
K149	T	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring- chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzylchloride.)
K150	T	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with

		the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.
K151	T	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.
K156	T	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).
K157	T	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).
K158	T	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).
K159	T	Organics from the treatment of thiocarbamate wastes.
K161	R, T	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.).

Inorganic chemicals:

K071	T	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.
K073	T	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.
K106	T	Wastewater treatment sludge from the mercury cell process in chlorine production.

Pesticides:

K031	T	By-product salts generated in the production of MSMA and cacodylic acid.
K032	T	Wastewater treatment sludge from the production of chlordane.
K033	T	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.
K034	T	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.
K035	T	Wastewater treatment sludges generated in the production of creosote.
K036	T	Still bottoms from toluene reclamation distillation in the production of disulfoton.
K037	T	Wastewater treatment sludges from the production of disulfoton.
K038	T	Wastewater from the washing and stripping of phorate production.
K039	T	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.
K040	T	Wastewater treatment sludge from the production of phorate.
K041	T	Wastewater treatment sludge from the production of toxaphene.
K042		T Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K043	T	2,6-Dichlorophenol waste from the production of 2,4-D.
K097	T	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.
K098	T	Untreated process wastewater from the production of toxaphene.

K099	T	Untreated wastewater from the production of 2,4-D.
K123	T	Process wastewater including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.
K124	C, T	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.
K125	T	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.
K126	T	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.
K131	C, T	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.
K132	T	Spent absorbent and wastewater separator solids from the production of methyl bromide.

Explosives:

K044	R	Wastewater treatment sludges from the manufacturing and processing of explosives.
K045	R	Spent carbon from the treatment of wastewater containing explosives.
K046	T	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.
K047	R	Pink/red water from TNT operations.

Petroleum refining:

K048	T	Dissolved air (DAF) float from the petroleum refining industry.
K049	T	Slop oil emulsion from the petroleum refining industry.
K050	T	Heat exchanger cleaning sludge from the petroleum refining industry.
K051	T	API separator sludge from the petroleum refining industry.
K052	T	Tank bottoms (leaded) from the petroleum refining industry.
K169	T	Crude oil storage tank sediment from petroleum refining operations.
K170	T	Clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations.
K171	I, T	Spent Hydro treating catalyst from petroleum operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).
K172	I, T	Spent Hydro refining catalyst from petroleum refining operations, including guard bed sused to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).

Iron and steel:

K061	T	Emission control dust/sludge from the primary production of steel in electric furnaces.
K062	C, T	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).

Primary copper:

Primary lead:

Primary zinc:

Primary aluminum:

K088	T	Spent pot liners from primary aluminum reduction.
------	---	---

Ferroalloys:

Secondary lead:

K069	T	Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register.
------	---	---

K100	T	Waste leaching solution from acid leaching of emission control dust/ludge from secondary lead smelting.
------	---	---

Veterinary pharmaceuticals:

K084	T	Wastewater treatment sludges generated during the veterinary pharmaceuticals from arsenic or organo-arsenic compounds production of
K101	T	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K102	T	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.

Ink formulation:

K086	T	Solvent washes sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the of ink pigments, driers, soaps, and stabilizers containing chromium and lead.
------	---	--

Coking:

K060	T	Ammonia still lime from coking operations.
K087	T	Decanter tank tar from coking operations.
K141	T	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).
K142	T	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.
K143	T	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.
K144	T	Wastewater sump from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.
K145	T	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.
K147	T	Tar storage tank residues from coal tar refining.
K148	T	Residues from coal tar distillation, including but not limited to, still bottoms.

Table 5: OFF-SPECIFICATION AND DISCARDED CHEMICAL PRODUCTS CONSIDERED ACUTELY HAZARDOUS (P-List)

Hazard Waste No.	Chemical Abstracts No.	Substance
P023	107-20-0	Acetaldehyde, chloro-
P002	591-08-2	Acetamide, N-(aminothioxomethyl)-
P057	640-19-7	Acetamide, 2-fluoro-
P058	62-74-8	Acetic acid, fluoro-, sodium salt
P002	591-08-2	1-Acetyl-2-thiourea
P003	107-02-8	Acrolein
P070	116-06-3	Aldicarb
P203	1646-88-4	Aldicarb sulfone.
P004	309-00-2	Aldrin
P005	107-18-6	Allyl alcohol
P006	20859-73-8	Aluminum phosphide (R,T)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-Aminopyridine
P008	131-74-8	Ammonium picrate (R)
P009	7803-55-6	Ammonium vanadate
P119	506-61-6	Argentate(1-), bis(cyano-C)-,
P099	7778-39-4	potassium
P010		Arsenic acid $H<INF>3</INF> AsO<INF>4</INF>$
P012	1327-53-3	Arsenic oxide $As<INF>2</INF> O<INF>3</INF>$
P011	1303-28-2	Arsenic oxide $As<INF>2</INF> O<INF>5</INF>$
P011	1303-28-2	Arsenic pentoxide
P012	1327-53-3	Arsenic trioxide
P038	692-42-2	Arsine, diethyl-
P036	696-28-6	Arsonous dichloride, phenyl-
P054	151-56-4	Aziridine
P067	75-55-8	Aziridine, 2-methyl-
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro-
P028	100-44-7	Benzene, (chloromethyl)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzeneethanamine, alpha,alpha- dimethyl-
P014	108-98-5	Benzenethiol
P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2- dimethyl-, methylcarbamate.
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with(3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5- yl methylcarbamate ester (1:1).
P001	1\ 81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3- oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%
P028	100-44-7	Benzyl chloride
P015	7440-41-7	Beryllium powder
P017	598-31-2	Bromoacetone
P018	357-57-3	Brucine
P045	39196-18-4	2-Butanone, 3,3-dimethyl-1-(methylthio)-, O-[methylamino]carbonyl] oxime
P021	592-01-8	Calcium cyanide $Ca(CN)<INF>2</INF>$
P189	55285-14-8	Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl- amino)carbonyl]- 5-methyl-

		1H- pyrazol-3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H- pyrazol-5-yl ester.
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563-66-2	Carbofuran.
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan.
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P202	64-00-6	m-Cumenyl methylcarbamate.
P030		Cyanides (soluble cyanide salts), not otherwise specified
P031	460-19-5	Cyanogen
P033	506-77-4	Cyanogen chloride(CN)Cl
P034	131-89-5	2-Cyclohexyl-4,6-dinitrophenol
P016	542-88-1	Dichloromethyl ether
P036	696-28-6	Dichlorophenylarsine
P037	60-57-1	Dieldrin
P038	692-42-2	Diethylarsine
P041	311-45-5	Diethyl-p-nitrophenyl phosphate
P040	297-97-2	O,O-Diethyl O-pyrazinyl phosphorothioate
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro-1,4,4a,5,8,8a,-hexahydro-,(1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	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)-
P037	60-57-1	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)-
P051	11\ 72-20-8	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,2abeta,3alpha,6alpha,6 abeta,7beta, 7alpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan.
P047	11\ 534-52-1	4,6-Dinitro-o-cresol, & salts
P048	51-28-5	2,4-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramide, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O- [(methylamino)-carbonyl]oxime
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites

P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioc acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752-77-5	Ethanimidothioc acid, N-[[[(methylamino)carbonyl]oxy]-, methylester
P101	107-12-0	Ethyl cyanide
P054	151-56-4	Ethyleneimine
P097	52-85-7	Famphur
P056	7782-41-4	Fluorine
P057	640-19-7	Fluoroacetamide
P058	62-74-8	Fluoroacetic acid, sodium salt
P198	23422-53-9	Formetanate hydrochloride.
P197	17702-57-7	Formparanate.
P065	628-86-4	Fulminic acid, mercury(2+) salt (R,T)
P059	76-44-8	Heptachlor
P062	757-58-4	Hexaethyl tetraphosphate
P116	79-19-6	Hydrazinecarbothioamide
P068	60-34-4	Hydrazine, methyl-
P063	74-90-8	Hydrocyanic acid
P063	74-90-8	Hydrogen cyanide
P096	7803-51-2	Hydrogen phosphide
P060	465-73-6	Isodrin
P192	119-38-0	Isolan.
P202	64-00-6	3-Isopropylphenyl N-methylcarbamate.
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato- S,S')-,
P196	15339-36-3	Manganese dimethyldithiocarbamate.
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino)- carbonyl]oxy]phenyl]- , monohydrochloride.
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'-[2- methyl-4- [[[(methylamino)carbonyl]oxy]phenyl]-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10- hexachloro- 1,5,5a,6,9,9a- hexahydro-,3-oxide
P059	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8- heptachloro-3a,4,7,7a- tetrahydro-
P199	2032-65-7	Methiocarb.
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methylactonitrile
P071	298-00-0	Methyl parathion
P190	1129-41-5	Metolcarb.
P128	315-8-4	Mexacarbate.
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl Ni(CO) ₄ , (T-4)-
P074	557-19-7	Nickel cyanide

P074	557-19-7	Nickel cynaide Ni(CN) $\times 2$
P075	\1\ 54-11-5	Nicotine, & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide NO
P078	10102-44-0	Nitrogen oxide NO $\times 2$
P081	55-63-0	Nitroglycerine (R)
P082	P 62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramide
P087	P20816-12-0	Osmium oxide OsO $\times 4$, (T-4)-
P087	20816-12-0	Osmium tetroxide
P088	145-73-3	Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid
P194	23135-22-0	Oxamyl.
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro-
P047	\1\ 534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester).
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methyl carbamate.
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoridic acid, bis(1- methylethyl) ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4- nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O- pyrazinyl ester
P097	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester
P071	298-00-0	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester
P204	57-47-6	Physostigmine.
P188	57-64-7	Physostigmine salicylate.
P110	78-00-2	Plumbane, tetraethyl-
P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide
P201	2631-37-0	Promecarb
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-, -[(methylamino)carbonyl]oxime
P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfonyl)- , O-[(methylamino)carbonyl] oxime.
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-

P081	55-63-0	1,2,3-Propanetriol, trinitrate (R)
P017	598-31-2	2-Propanone, 1-bromo-
P102	107-19-7	Propargyl alcohol
P003	107-02-8	2-Propenal
P005	107-18-6	2-Propen-1-ol
P067	75-55-8	1,2-Propylenimine
P102	107-19-7	2-Propyn-1-ol
P008	504-24-5	4-Pyridinamine
P075	\\1\ 54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8- trimethyl-, methylcarbamate (ester), (3aS-cis)-.
P114	12039-52-0	Selenious acid, dithallium(1+) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide
P104	506-64-9	Silver cyanide Ag(CN)
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide
P106	143-33-9	Sodium cyanide Na(CN)
P108	\\1\ 57-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	\\1\ 57-24-9	Strychnine, & salts
P115	7446-18-6	Sulfuric acid, dithallium(1+) salt
P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane (R)
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide Tl_2O_3
P114	12039-52-0	Thallium(I) selenite
P115	7446-18-6	Thallium(I) sulfate
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide $[(H_2N)C(S)]_2NH$
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P185	26419-73-8	Tirpate.
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium oxide V_2O_5
P120	1314-62-1	Vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	\\1\ 81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato- S,S')-,
P121	557-21-1	Zinc cyanide
P121	557-21-1	Zinc cyanide $Zn(CN)_2$
P122	1314-84-7	Zinc phosphide Zn_3P_2 , concentrations greater than 10% (R,T)
P205	137-30-4	Ziram.

TABLE 6: OFF-SPECIFICATION AND DISCARDED CHEMICAL PRODUCTS CONSIDERED ACUTELY HAZARDOUS (U-List)

Hazardous Waste No.	Abstracts No.	Substance
U394	30558-43-1	A2213.
U001	75-07-0	Acetaldehyde (I)
U034	75-87-6	Acetaldehyde, trichloro-
U187	62-44-2	Acetamide, N-(4-ethoxyphenyl)-
U005	53-96-3	Acetamide, N-9H-fluoren-2-yl-
U240	1\ 94-75-7	Acetic acid, (2,4-dichlorophenoxy)-, salts & esters
U112	141-78-6	Acetic acid ethyl ester (I)
U144	301-04-2	Acetic acid, lead(2+) salt
U214	563-68-8	Acetic acid, thallium(1+) salt see F027 93-76-5 Acetic acid, (2,4,5-trichlorophenoxy)-
U002	67-64-1	Acetone (I)
U003	75-05-8	Acetonitrile (I,T)
U004	98-86-2	Acetophenone
U005	53-96-3	2-Acetylaminofluorene
U006	75-36-5	Acetyl chloride (C,R,T)
U007	79-06-1	Acrylamide
U008	79-10-7	Acrylic acid (I)
U009	107-13-1	Acrylonitrile
U011	61-82-5	Amitrole
U012	62-53-3	Aniline (I,T)
U136	75-60-5	Arsinic acid, dimethyl-
U014	492-80-8	Auramine
U015	115-02-6	Azaserine
U010	50-07-7	Azirino[2,3<ls>thn>eq>3,4]pyrrolo[1,2- a]indole-4,7-dione, 6-amino-8-[[aminocarbonyloxy]methyl]- 1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5- methyl-, [1aS-(1aalpha, 8beta,8aalpha,8balpha)]-
U280	101-27-9	Barban.
U278	22781-23-3	Bendiocarb.
U364	22961-82-6	Bendiocarb phenol.
U271	17804-35-2	Benomyl.
U157	56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
U016	225-51-4	Benz[c]acridine
U017	98-87-3	Benzal chloride
U192	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1- dimethyl-2-propynyl)-
U018	56-55-3	Benz[a]anthracene
U094	57-97-6	Benz[a]anthracene, 7,12-dimethyl-
U012	62-53-3	Benzenamine (I,T)
U014	492-80-8	Benzenamine, 4,4-carbonimidoylbis[N,N- imethyl-
U049	3165-93-3	Benzenamine, 4-chloro-2-methyl-, hydrochloride
U093	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-
U328	95-53-4	Benzenamine, 2-methyl-
U353	106-49-0	Benzenamine, 4-methyl-
U158	101-14-4	Benzenamine, 4,4-methylenebis[2-chloro-
U222	636-21-5	Benzenamine, 2-methyl-, hydrochloride
U181	99-55-8	Benzenamine, 2-methyl-5-nitro-
U019	71-43-2	Benzene (I,T)

U038	510-15-6	Benzeneacetic acid, 4-chloro-alpha-(4- chlorophenyl)-alpha-hydroxy-, ethyl ester
U030	101-55-3	Benzene, 1-bromo-4-phenoxy-
U035	305-03-3	Benzenebutanoic acid, 4-[bis(2- chloroethyl)amino]-
U037	108-90-7	Benzene, chloro-
U221	25376-45-8	Benzenediamine, ar-methyl-
U028	117-81-7	1,2-Benzenedicarboxylic acid, bis(2- ethylhexyl) ester
U069	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
U088	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester
U102	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester
U107	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester
U070	95-50-1	Benzene, 1,2-dichloro-
U071	541-73-1	Benzene, 1,3-dichloro-
U072	106-46-7	Benzene, 1,4-dichloro-
U060	72-54-8	Benzene, 1,1-(2,2- dichloroethylidene)bis[4-chloro-
U017	98-87-3	Benzene, (dichloromethyl)-
U223	26471-62-5	Benzene, 1,3-diisocyanatomethyl- (R,T)
U239	1330-20-7	Benzene, dimethyl- (I,T)
U201	108-46-3	1,3-Benzenediol
U127	118-74-1	Benzene, hexachloro-
U056	110-82-7	Benzene, hexahydro- (I)
U220	108-88-3	Benzene, methyl-
U105	121-14-2	Benzene, 1-methyl-2,4-dinitro-
U106	606-20-2	Benzene, 2-methyl-1,3-dinitro-
U055	98-82-8	Benzene, (1-methylethyl)- (I)
U169	98-95-3	Benzene, nitro-
U183	608-93-5	Benzene, pentachloro-
U185	82-68-8	Benzene, pentachloronitro-
U020	98-09-9	Benzenesulfonic acid chloride (C,R)
U020	98-09-9	Benzenesulfonyl chloride (C,R)
U207	95-94-3	Benzene, 1,2,4,5-tetrachloro-
U061	50-29-3	Benzene, 1,1-(2,2,2- trichloroethylidene)bis[4-chloro-
U247	72-43-5	Benzene, 1,1-(2,2,2- trichloroethylidene)bis[4- methoxy-
U023	98-07-7	Benzene, (trichloromethyl)-
U234	99-35-4	Benzene, 1,3,5-trinitro-
U021	92-87-5	Benzidine
U202	1\1\ 81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1- dioxide, & salts
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U203	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-
U141	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2- dimethyl-
U090	94-58-6	1,3-Benzodioxole, 5-propyl-
U064	189-55-9	Benzo[rs]pentaphene
U248	1\1\81-81-2	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3- oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less
U022	50-32-8	Benzo[a]pyrene
U197	106-51-4	p-Benzoquinone
U023	98-07-7	Benzotrichloride (C,R,T)
U085	1464-53-5	2,2-Bioxirane
U021	92-87-5	[1,1-Biphenyl]-4,4-diamine
U073	91-94-1	[1,1'-Biphenyl]-4,4'-diamine, 3,3'- dichloro-
U091	119-90-4	[1,1'-Biphenyl]-4,4'-diamine, 3,3'- dimethoxy-
U095	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'- dimethyl-

U225	75-25-2	Bromoform
U030	101-55-3	4-Bromophenyl phenyl ether
U128	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-
U172	924-16-3	1-Butanamine, N-butyl-N-nitroso-
U031	71-36-3	1-Butanol (l)
U159	78-93-3	2-Butanone (l,T)
U160	1338-23-4	2-Butanone, peroxide (R,T)
U053	4170-30-3	2-Butenal
U074	764-41-0	2-Butene, 1,4-dichloro- (l,T)
U143	303-34-4	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-[1alpha(Z),7(2S*,3R*),7aalpha]]-
U031	71-36-3	n-Butyl alcohol (l)
U136	75-60-5	Cacodylic acid
U032	13765-19-0	Calcium chromate
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804-35-2	Carbamic acid, [1-[(butylamino)carbonyl]-1H- benzimidazol-2-yl]-, methyl ester.
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4- chloro-2-butynyl ester.
U238	51-79-6	Carbamic acid, ethyl ester
U178	615-53-2	Carbamic acid, methylnitroso-, ethyl ester
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis(iminocarbonothioyl)]bis-, dimethyl ester.
U097	79-44-7	Carbamic chloride, dimethyl-
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)- , S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888-80-9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester.
U114	111-54-6	Carbamodithioic acid, 1,2- ethanediylbis-, salts & esters
U062	2303-16-4	Carbamothioic acid, bis(1-methylethyl)- , S-(2,3-dichloro-2-propenyl) ester
U279	63-25-2	Carbaryl.
U372	10605-21-7	Carbendazim.
U367	1563-38-8	Carbofuran phenol.
U215	6533-73-9	Carbonic acid, dithallium(1+) salt
U033	353-50-4	Carbonic difluoride
U156	79-22-1	Carbonochloridic acid, methyl ester(l,T)
U033	353-50-4	Carbon oxyfluoride (R,T)
U211	56-23-5	Carbon tetrachloride
U034	75-87-6	Chloral
U035	305-03-3	Chlorambucil
U036	57-74-9	Chlordane, alpha & gamma isomers
U026	494-03-1	Chlornaphazin
U037	108-90-7	Chlorobenzene
U038	510-15-6	Chlorobenzilate
U039	59-50-7	p-Chloro-m-cresol
U042	110-75-8	2-Chloroethyl vinyl ether
U044	67-66-3	Chloroform
U046	107-30-2	Chloromethyl methyl ether
U047	91-58-7	beta-Chloronaphthalene
U048	95-57-8	o-Chlorophenol
U049	3165-93-3	4-Chloro-o-toluidine, hydrochloride
U032	13765-19-0	Chromic acid H<INF>2</INF> CrO<INF>4</INF>, calcium salt
U050	218-01-9	Chrysene

U051	Creosote
U052	1319-77-3	Cresol (Cresylic acid)
U053	4170-30-3	Crotonaldehyde
U055	98-82-8	Cumene (I)
U246	506-68-3	Cyanogen bromide (CN)Br
U197	106-51-4	2,5-Cyclohexadiene-1,4-dione
U056	110-82-7	Cyclohexane (I)
U129	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro- ,(1alpha,2alpha,3beta,4alpha,5alpha,6 beta)-
U057	108-94-1	Cyclohexanone (I)
U130	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5- hexachloro-
U058	50-18-0	Cyclophosphamide
U240	1\ 94-75-7	2,4-D, salts & esters
U059	20830-81-3	Daunomycin
U060	72-54-8	DDD
U061	50-29-3	DDT
U062	2303-16-4	Diallate
U063	53-70-3	Dibenz[a,h]anthracene
U064	189-55-9	Dibenzo[a,i]pyrene
U066	96-12-8	1,2-Dibromo-3-chloropropane
U069	84-74-2	Dibutyl phthalate
U070	95-50-1	o-Dichlorobenzene
U071	541-73-1	m-Dichlorobenzene
U072	106-46-7	p-Dichlorobenzene
U073	91-94-1	3,3'-Dichlorobenzidine
U074	764-41-0	1,4-Dichloro-2-butene (I,T)
U075	75-71-8	Dichlorodifluoromethane
U078	75-35-4	1,1-Dichloroethylene
U079	156-60-5	1,2-Dichloroethylene
U025	111-44-4	Dichloroethyl ether
U027	108-60-1	Dichloroisopropyl ether
U024	111-91-1	Dichloromethoxy ethane
U081	120-83-2	2,4-Dichlorophenol
U082	87-65-0	2,6-Dichlorophenol
U084	542-75-6	1,3-Dichloropropene
U085	1464-53-5	1,2:3,4-Diepoxybutane (I,T)
U108	123-91-1	1,4-Diethyleneoxide
U028	117-81-7	Diethylhexyl phthalate
U395	5952-26-1	Diethylene glycol, dicarbamate.
U086	1615-80-1	N,N'-Diethylhydrazine
U087	3288-58-2	O,O-Diethyl S-methyl dithiophosphate
U088	84-66-2	Diethyl phthalate
U089	56-53-1	Diethylstilbesterol
U090	94-58-6	Dihydrosafrole
U091	119-90-4	3,3'-Dimethoxybenzidine
U092	124-40-3	Dimethylamine (I)
U093	60-11-7	p-Dimethylaminoazobenzene
U094	57-97-6	7,12-Dimethylbenz[a]anthracene
U095	119-93-7	3,3'-Dimethylbenzidine
U096	80-15-9	alpha,alpha- Dimethylbenzylhydroperoxide (R)
U097	79-44-7	Dimethylcarbamoyl chloride
U098	57-14-7	1,1-Dimethylhydrazine
U099	540-73-8	1,2-Dimethylhydrazine
U101	105-67-9	2,4-Dimethylphenol

U102	131-11-3	Dimethyl phthalate
U103	77-78-1	Dimethyl sulfate
U105	121-14-2	2,4-Dinitrotoluene
U106	606-20-2	2,6-Dinitrotoluene
U107	117-84-0	Di-n-octyl phthalate
U108	123-91-1	1,4-Dioxane
U109	122-66-7	1,2-Diphenylhydrazine
U110	142-84-7	Dipropylamine (l)
U111	621-64-7	Di-n-propylnitrosamine
U041	106-89-8	Epichlorohydrin
U001	75-07-0	Ethanal (l)
U404	121-44-8	Ethanamine, N,N-diethyl-
U174	55-18-5	Ethanamine, N-ethyl-N-nitroso-
U155	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2- pyridinyl-N'-(2-thienylmethyl)-
U067	106-93-4	Ethane, 1,2-dibromo-
U076	75-34-3	Ethane, 1,1-dichloro-
U077	107-06-2	Ethane, 1,2-dichloro-
U131	67-72-1	Ethane, hexachloro-
U024	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis[2- chloro-
U117	60-29-7	Ethane, 1,1'-oxybis-(l)
U025	111-44-4	Ethane, 1,1'-oxybis[2-chloro-
U184	76-01-7	Ethane, pentachloro-
U208	630-20-6	Ethane, 1,1,1,2-tetrachloro-
U209	79-34-5	Ethane, 1,1,2,2-tetrachloro-
U218	62-55-5	Ethanethioamide
U226	71-55-6	Ethane, 1,1,1-trichloro-
U227	79-00-5	Ethane, 1,1,2-trichloro-
U410	59669-26-0	Ethanimidothioic acid, N,N'-[thiobis[(methylimino)carbonyloxy]]bi s-, dimethyl ester
U394	30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
U359	110-80-5	Ethanol, 2-ethoxy-
U173	1116-54-7	Ethanol, 2,2'-(nitrosoimino)bis-
U395	5952-26-1	Ethanol, 2,2'-oxybis-, dicarbamate.
U004	98-86-2	Ethanone, 1-phenyl-
U043	75-01-4	Ethene, chloro-
U042	110-75-8	Ethene, (2-chloroethoxy)-
U078	75-35-4	Ethene, 1,1-dichloro-
U079	156-60-5	Ethene, 1,2-dichloro-, (E)-
U210	127-18-4	Ethene, tetrachloro-
U228	79-01-6	Ethene, trichloro-
U112	141-78-6	Ethyl acetate (l)
U113	140-88-5	Ethyl acrylate (l)
U238	51-79-6	Ethyl carbamate (urethane)
U117	60-29-7	Ethyl ether (l)
U114	111-54-6	Ethylenebisdithiocarbamic acid, salts & esters
U067	106-93-4	Ethylene dibromide
U077	107-06-2	Ethylene dichloride
U359	110-80-5	Ethylene glycol monoethyl ether
U115	75-21-8	Ethylene oxide (l,T)
U116	96-45-7	Ethylenethiourea
U076	75-34-3	Ethylidene dichloride
U118	97-63-2	Ethyl methacrylate

U119	62-50-0	Ethyl methanesulfonate
U120	206-44-0	Fluoranthene
U122	50-00-0	Formaldehyde
U123	64-18-6	Formic acid (C,T)
U124	110-00-9	Furan (I)
U125	98-01-1	2-Furancarboxaldehyde (I)
U147	108-31-6	2,5-Furandione
U213	109-99-9	Furan, tetrahydro-(I)
U125	98-01-1	Furfural (I)
U124	110-00-9	Furfuran (I)
U206	18883-66-4	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitroso-ureido)-, D-
U206	18883-66-4	D-Glucose, 2-deoxy-2-[[[(methylnitrosoamino)-carbonyl]amino]-
U126	765-34-4	Glycidylaldehyde
U163	70-25-7	Guanidine, N-methyl-N'-nitro-N-nitroso-
U127	118-74-1	Hexachlorobenzene
U128	87-68-3	Hexachlorobutadiene
U130	77-47-4	Hexachlorocyclopentadiene
U131	67-72-1	Hexachloroethane
U132	70-30-4	Hexachlorophene
U243	1888-71-7	Hexachloropropene
U133	302-01-2	Hydrazine (R,T)
U086	1615-80-1	Hydrazine, 1,2-diethyl-
U098	57-14-7	Hydrazine, 1,1-dimethyl-
U099	540-73-8	Hydrazine, 1,2-dimethyl-
U109	122-66-7	Hydrazine, 1,2-diphenyl-
U134	7664-39-3	Hydrofluoric acid (C,T)
U134	7664-39-3	Hydrogen fluoride (C,T)
U135	7783-06-4	Hydrogen sulfide
U135	7783-06-4	Hydrogen sulfide H ₂ S
U096	80-15-9	Hydroperoxide, 1-methyl-1-phenylethyl-(R)
U116	96-45-7	2-Imidazolidinethione
U137	193-39-5	Indeno[1,2,3-cd]pyrene
U190	85-44-9	1,3-Isobenzofurandione
U140	78-83-1	Isobutyl alcohol (I,T)
U141	120-58-1	Isosafrole
U142	143-50-0	Kepone
U143	303-34-4	Lasiocarpine
U144	301-04-2	Lead acetate
U146	1335-32-6	Lead, bis(acetato-O)tetrahydroxytri-
U145	7446-27-7	Lead phosphate
U146	1335-32-6	Lead subacetate
U129	58-89-9	Lindane
U163	70-25-7	MNNG
U147	108-31-6	Maleic anhydride
U148	123-33-1	Maleic hydrazide
U149	109-77-3	Malononitrile
U150	148-82-3	Melphalan
U151	7439-97-6	Mercury
U152	126-98-7	Methacrylonitrile (I, T)
U092	124-40-3	Methanamine, N-methyl- (I)
U029	74-83-9	Methane, bromo-
U045	74-87-3	Methane, chloro- (I, T)
U046	107-30-2	Methane, chloromethoxy-

U068	74-95-3	Methane, dibromo-
U080	75-09-2	Methane, dichloro-
U075	75-71-8	Methane, dichlorodifluoro-
U138	74-88-4	Methane, iodo-
U119	62-50-0	Methanesulfonic acid, ethyl ester
U211	56-23-5	Methane, tetrachloro-
U153	74-93-1	Methanethiol (I, T)
U225	75-25-2	Methane, tribromo-
U044	67-66-3	Methane, trichloro-
U121	75-69-4	Methane, trichlorofluoro-
U036	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8- octachloro-2,3,3a,4,7,7a-hexahydro
U154	67-56-1	Methanol (I)
U155	91-80-5	Methapyrilene
U142	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6- decachlorooctahydro-
U247	72-43-5	Methoxychlor
U154	67-56-1	Methyl alcohol (I)
U029	74-83-9	Methyl bromide
U186	504-60-9	1-Methylbutadiene (I)
U045	74-87-3	Methyl chloride (I,T)
U156	79-22-1	Methyl chlorocarbonate (I,T)
U226	71-55-6	Methyl chloroform
U157	56-49-5	3-Methylcholanthrene
U158	101-14-4	4,4'-Methylenebis(2-chloroaniline)
U068	74-95-3	Methylene bromide
U080	75-09-2	Methylene chloride
U159	78-93-3	Methyl ethyl ketone (MEK) (I,T)
U160	1338-23-4	Methyl ethyl ketone peroxide (R,T)
U138	74-88-4	Methyl iodide
U161	108-10-1	Methyl isobutyl ketone (I)
U162	80-62-6	Methyl methacrylate (I,T)
U161	108-10-1	4-Methyl-2-pentanone (I)
U164	56-04-2	Methylthiouracil
U010	50-07-7	Mitomycin C
U059	20830-81-3	5,12-Naphthacenedione, 8-acetyl-10-[(3- amino-2,3,6-trideoxy)-alpha-L-lyxo- hexopyranosyl)oxy]-7,8,9,10- tetrahydro-6,8,11-trihydroxy-1- methoxy-, (8S-cis)-
U167	134-32-7	1-Naphthalenamine
U168	91-59-8	2-Naphthalenamine
U026	494-03-1	Naphthalenamine, N,N'-bis(2- chloroethyl)-
U165	91-20-3	Naphthalene
U047	91-58-7	Naphthalene, 2-chloro-
U166	130-15-4	1,4-Naphthalenedione
U236	72-57-1	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'- dimethyl[1,1'-biphenyl]-4,4'- diyl)bis(azo)bis[5-amino-4-hydroxy]-, tetrasodium salt
U279	63-25-2	1-Naphthalenol, methylcarbamate.
U166	130-15-4	1,4-Naphthoquinone
U167	134-32-7	alpha-Naphthylamine
U168	91-59-8	beta-Naphthylamine
U217	10102-45-1	Nitric acid, thallium(1+) salt
U169	98-95-3	Nitrobenzene (I,T)
U170	100-02-7	p-Nitrophenol
U171	79-46-9	2-Nitropropane (I,T)

U172	924-16-3	N-Nitrosodi-n-butylamine
U173	1116-54-7	N-Nitrosodiethanolamine
U174	55-18-5	N-Nitrosodiethylamine
U176	759-73-9	N-Nitroso-N-ethylurea
U177	684-93-5	N-Nitroso-N-methylurea
U178	615-53-2	N-Nitroso-N-methylurethane
U179	100-75-4	N-Nitrosopiperidine
U180	930-55-2	N-Nitrosopyrrolidine
U181	99-55-8	5-Nitro-o-toluidine
U193	1120-71-4	1,2-Oxathiolane, 2,2-dioxide
U058	50-18-0	2H-1,3,2-Oxazaphosphorin-2-amine, N,N-bis(2-chloroethyl)tetrahydro-, 2-oxide
U115	75-21-8	Oxirane (I,T)
U126	765-34-4	Oxiranecarboxyaldehyde
U041	106-89-8	Oxirane, (chloromethyl)-
	123-63-7	Paraldehyde
U183	608-93-5	Pentachlorobenzene
U184	76-01-7	Pentachloroethane
U185	82-68-8	Pentachloronitrobenzene (PCNB)
See F027	87-86-5	Pentachlorophenol
U161	108-10-1	Pentanol, 4-methyl-
U186	504-60-9	1,3-Pentadiene (I)
U187	62-44-2	Phenacetin
U188	108-95-2	Phenol
U048	95-57-8	Phenol, 2-chloro-
U039	59-50-7	Phenol, 4-chloro-3-methyl-
U081	120-83-2	Phenol, 2,4-dichloro-
U082	87-65-0	Phenol, 2,6-dichloro-
U089	56-53-1	Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)-
U101	105-67-9	Phenol, 2,4-dimethyl-
U052	1319-77-3	Phenol, methyl-
U132	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
U170	100-02-7	Phenol, 4-nitro-
See F027	87-86-5	Phenol, pentachloro-
See F027	58-90-2	Phenol, 2,3,4,6-tetrachloro-
See F027	95-95-4	Phenol, 2,4,5-trichloro-
See F027	88-06-2	Phenol, 2,4,6-trichloro-
U150	148-82-3	L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-
U145	7446-27-7	Phosphoric acid, lead(2+) salt (2:3)
U087	3288-58-2	Phosphorodithioic acid, O,O-diethyl S-methyl ester
U189	1314-80-3	Phosphorus sulfide (R)
U190	85-44-9	Phthalic anhydride
U191	109-06-8	2-Picoline
U179	100-75-4	Piperidine, 1-nitroso-
U192	23950-58-5	Pronamide
U194	107-10-8	1-Propanamine (I,T)
U111	621-64-7	1-Propanamine, N-nitroso-N-propyl-
U110	142-84-7	1-Propanamine, N-propyl- (I)
U066	96-12-8	Propane, 1,2-dibromo-3-chloro-
U083	78-87-5	Propane, 1,2-dichloro-
U149	109-77-3	Propanedinitrile
U171	79-46-9	Propane, 2-nitro- (I,T)
U027	108-60-1	Propane, 2,2'-oxybis[2-chloro-

U193	1120-71-4	1,3-Propane sultone
See F027	93-72-1	Propanoic acid, 2-(2,4,5- trichlorophenoxy)-
U235	126-72-7	1-Propanol, 2,3-dibromo-, phosphate(3:1)
U140	78-83-1	1-Propanol, 2-methyl- (I,T)
U002	67-64-1	2-Propanone (I)
U007	79-06-1	2-Propenamide
U084	542-75-6	1-Propene, 1,3-dichloro-
U243	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-
U009	107-13-1	2-Propenenitrile
U152	126-98-7	2-Propenenitrile, 2-methyl- (I,T)
U008	79-10-7	2-Propenoic acid (I)
U113	140-88-5	2-Propenoic acid, ethyl ester (I)
U118	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester
U162	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (I,T)
U373	122-42-9	Propham.
U411	114-26-1	Propoxur.
U387	52888-80-9	Prosulfocarb.
U194	107-10-8	n-Propylamine (I,T)
U083	78-87-5	Propylene dichloride
U148	123-33-1	3,6-Pyridazinedione, 1,2-dihydro-
U196	110-86-1	Pyridine
U191	109-06-8	Pyridine, 2-methyl-
U237	66-75-1	2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2- chloroethyl)amino]-
U164	56-04-2	4(1H)-Pyrimidinone, 2,3-dihydro-6- methyl-2-thioxo-
U180	930-55-2	Pyrrolidine, 1-nitroso-
U200	50-55-5	Reserpine
U201	108-46-3	Resorcinol
U202	111-81-07-2	Saccharin, & salts
U203	94-59-7	Safrole
U204	7783-00-8	Selenious acid
U204	7783-00-8	Selenium dioxide
U205	7488-56-4	Selenium sulfide
U205	7488-56-4	Selenium sulfide SeS ₂ (R,T)
U015	115-02-6	L-Serine, diazoacetate (ester)
See F027	93-72-1	Silvex (2,4,5-TP)
U206	18883-66-4	Streptozotocin
U103	77-78-1	Sulfuric acid, dimethyl ester
U189	1314-80-3	Sulfur phosphide (R)
See F027	93-76-5	2,4,5-T
U207	95-94-3	1,2,4,5-Tetrachlorobenzene
U208	630-20-6	1,1,1,2-Tetrachloroethane
U209	79-34-5	1,1,2,2-Tetrachloroethane
U210	127-18-4	Tetrachloroethylene
See F027	58-90-2	2,3,4,6-Tetrachlorophenol
U213	109-99-9	Tetrahydrofuran (I)
U214	563-68-8	Thallium(I) acetate
U215	6533-73-9	Thallium(I) carbonate
U216	7791-12-0	Thallium(I) chloride
U216	7791-12-0	Thallium chloride TlCl
U217	10102-45-1	Thallium(I) nitrate
U218	62-55-5	Thioacetamide
U410	59669-26-0	Thiodicarb.
U153	74-93-1	Thiomethanol (I,T)

U244	137-26-8	Thioperoxydicarbonic diamide [(H<INF>2</INF>N)C(S)]<INF>2</INF> S<INF>2</INF>, =
U409	23564-05-8	Thiophanate-methyl.
U219	62-56-6	Thiourea
U244	137-26-8	Thiram
U220	108-88-3	Toluene
U221	25376-45-8	Toluenediamine
U223	26471-62-5	Toluene diisocyanate (R,T)
U328	95-53-4	o-Toluidine
U353	106-49-0	p-Toluidine
U222	636-21-5	o-Toluidine hydrochloride
U389	2303-17-5	Triallate.
U011	61-82-5	1H-1,2,4-Triazol-3-amine
U227	79-00-5	1,1,2-Trichloroethane
U228	79-01-6	Trichloroethylene
U121	75-69-4	Trichloromonofluoromethane
See F027	95-95-4	2,4,5-Trichlorophenol
See F027	88-06-2	2,4,6-Trichlorophenol
U404	121-44-8	Triethylamine.
U234	99-35-4	1,3,5-Trinitrobenzene (R,T)
U182	123-63-7	1,3,5-Trioxane, 2,4,6-trimethyl-
U235	126-72-7	Tris(2,3-dibromopropyl) phosphate
U236	72-57-1	Trypan blue
U237	66-75-1	Uracil mustard
U176	759-73-9	Urea, N-ethyl-N-nitroso-
U177	684-93-5	Urea, N-methyl-N-nitroso-
U043	75-01-4	Vinyl chloride
U248	181-81-2	Warfarin, & salts, when present at concentrations of 0.3% or less
U239	1330-20-7	Xylene (l)
U200	50-55-5	Yohimban-16-carboxylic acid, 11,17- dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta,20alpha)-
U249	1314-84-7	Zinc phosphide Zn<INF>3</INF> P<INF>2</INF>, when present at concentrations of 10% or less

APPENDIX B - Examples of Potentially Incompatible Wastes

Many hazardous wastes, when mixed with other wastes or materials at the UH Hazardous Waste Facility, can produce effects that are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, wastes components, and materials, along with the harmful consequences, which result from mixing materials in one group with materials in another group. This list is not intended to be exhaustive. The mixing of a Group A material with a Group B material may have the potential consequences as noted.

GROUP 1-A

Acetylene sludge
Alkaline caustic liquids
Alkaline cleaners
Alkaline corrosive liquids
Alkaline corrosive
Battery fluids or solvents
Caustic wastewater
Lime sludge and other
Corrosive alkalis
Lime wastewater
Lime and water

GROUP 1-B

Acid sludge
Acid and water
Battery acid
Chemical cleaners
Electrolyte acid liquid
Etching acid liquid or solvents
Pickling liquor and
other corrosive acid
Spent acid
Spent mixed acid
Spent sulfuric acid

Potential consequences: Heat generation; violent reaction

GROUP 2-A

Aluminum
Beryllium
Calcium, Lithium,
Magnesium, Potassium,
Sodium, Zinc powder,
other reactive metals and
metal hydrides

GROUP 2-B

Any waste in Group 1-A 1-B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas

GROUP 3-A

Alcohols
Water

GROUP 3-B

Any concentrated waste in Group
1-A or 1-B
Calcium
Lithium
Metal hydrides
Potassium
SO₂Cl₂, SOCl₂, PCl₃,
CH₃SiCl₃
other water reactive wastes

Potential consequences: Fire or explosion, or heat generation; generation of flammable or toxic gases

GROUP 4-A

Alcohols
Aldehydes
Halogenated hydrocarbons
Nitrated hydrocarbons

GROUP 4-B

Group 1-A or
or 1-B wastes
Group 2-A wastes
Unsaturated hydrocarbons
Other reactive organic compounds and
solvents

Potential consequences: Fire, explosion, or violent reaction

GROUP 5-A

Spent cyanide and sulfide solutions

GROUP 5-B

Group 1-B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas

GROUP 6-A

Chlorates
Chlorine
Chlorites
Chromic acid
Hypochlorites
Nitrates
Nitric acid, fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

GROUP 6-B

Acetic acid and other organic
acids
Concentrated minerals acids
Group 2-A wastes
Group 4-A wastes
Other flammable and
combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

APPENDIX C - Common Halogenated and Non-Halogenated Organic Solvents

Halogenated solvents (i.e. solvents containing the chlorine, fluorine, bromine, or iodine element) pose special disposal problems for the university. As a direct result of these problems, most halogenated solvents are expensive to dispose of. Because of the high cost of disposal, halogenated solvents should be collected separately for most other solvents. A breakdown by solvent type is listed below to help generators categorize their waste solvents.

Common Halogenated And Non-Halogenated Organic Solvents collected from Laboratories and consolidated into 55-gallon Barrels by EHRM:

Halogenated Solvents

Chloroform
Methylene Chloride (Dichloromethane)
Carbon tetrachloride
Trichloroethane
Tetrachloroethane

Non-halogenated Solvents

Methyl alcohol
Ethyl alcohol
Diethyl ether
Acetonitrile
Benzene, Hexane
Pentane, Phenol
Toluene, Xylene
Ethyl acetate
Cyclohexane
Butanol, Acetone

Please note: Formaldehyde is listed under a separate waste stream and must not be mixed with other solvents whenever possible.