Hazardous Waste Management Plan

This document is required as per Title 40 of the Federal Code of Regulations at part 262. It provides generalized rules and guidelines for the University of Alabama in Hun tsville management of hazardous wastes.

Effective Date: August 1998

Review Date: December 2013

**TABLE OF CONTENTS**

## [HAZARDOUS WASTE POLICY STATEMENT](#HazWastePolicy)

## [INTRODUCTION](#Introduction)

## [UAH HAZARDOUS WASTE REGULATIONS](#_UAH_HAZARDOUS_WASTE)

## [HAZardous Waste Management SYstem](#HazWasteMgtSystem)

## [RESPONSIBILITY FOR IDENTIFICATION AND DISPOSAL](#IDandDisposal)

## [HAZARDOUS WASTE DETERMINATION](#HazWasteDetermination)

* 1. Characteristic Wastes
		1. Ignitable Waste
		2. Corrosive Waste
		3. Reactive Waste
		4. Toxic Waste
	2. Acutely Hazardous Waste
	3. Solvents
1. [WASTE MINIMIZATION](#Wasteminimization)
	1. Minimizing Reactive Waste
	2. Minimizing Quantities
	3. Recycling
	4. Substitution
	5. Reduction of Scale
	6. Donations of Chemicals to the University
	7. Unknowns
2. [HAZARDOUS WASTE COLLECTION PROCEDURES](#HazWasteCollectionProcedures)
	1. Segregation

 8.1.1 Hazardous Waste Accumulation Areas

* 1. Packaging and Containers
	2. Labeling
	3. Inspection
	4. Initiating Waste Removal
1. [EPA EMPTY DEFINITION AND DISPOSAL OF EMPTY CONTAINERS](#EPAEmpty)
2. [MISCELLANEOUS WASTE RULES](#MiscWaste)
3. [EMERGENCY PROCEDURES](#EmergencyProcedures)

12.0 [RESPONSIBILITY AND ENFORCEMENT](#ResponsibilityEnforcement)

[APPENDIX A LISTED HAZARDOUS WASTES](#APPENDIXA)

[APPENDIX B COMMON NON-REGULATED CHEMICAL WASTES](#APPENDIXB)

**1.0** **HAZARDOUS WASTE POLICY STATEMENT**

The University of Alabama in Huntsville is committed to full compliance with federal, state, and local laws and regulations pertaining to the management of hazardous waste. The Office of Environmental Health & Safety has overall responsibility for policies and procedures for the management of hazardous waste on campus. The Director of Environmental Health and Safety is the University compliance officer with responsibility for oversight of the Hazardous Waste Management Program. The director is responsible (1) for developing and maintaining University policies related to tracking, handling, transportation, storage, disposal and maintenance of records of hazardous materials and (2) for designing and conducting training programs for University personnel regarding the management of hazardous waste from cradle to grave. Colleges, departments, or other units using or generating hazardous waste are responsible for maintaining accurate records to track hazardous materials from their purchase or generation through their storage and disposal. Colleges, departments, or other units may develop policies and procedures for dealing with hazardous waste within their units. These policies are subject to review by the Office of Environmental Health and Safety and must be consistent with University policies.

The Director of Environmental Health and Safety has overall responsibility for monitoring compliance with federal, state, and local regulations, and is responsible for identification of units within the University that may not be complying fully with regulations. The Director is responsible for providing notification of non-compliance to the units involved and for providing consultation regarding changes necessary to comply with regulations. When units fail to make necessary changes to comply with regulations, the Director is responsible for reporting such non-compliance to the vice president with administrative responsibility over the unit involved.

**2.0** **INTRODUCTION**

The goal of the UAH Hazardous Waste Management Plan (HWMP) is to protect the health and safety of employees, students, and the environment while complying with applicable state and federal regulations. Implementation of a waste minimization program is vital to an effective hazardous waste management program. Utilizing procedures established within the HWMP the quantity and cost of hazardous waste disposals can be effectively reduced, the environment will be protected and employee safety will be enhanced. Planned purchases of only necessary quantities chemicals and closeouts of laboratories will greatly reduce the hazardous waste output at UAH.

The objective of this plan is to define the University of Alabama in Huntsville (UAH) responsibilities under federal and state regulations governing hazardous waste disposal and to outline a program for compliance with those regulations. This plan is intended to provide instructions for UAH faculty and staff in the management of hazardous waste. Information contained in this manual is applicable to all University divisions, centers, schools, and departments. Since laboratory work frequently produces an unpredictable variety of wastes, much of the information provided within this document specifically addresses laboratory waste disposal.

The United States Environmental Protection Agency has implemented strict rules and regulations pertaining to the handling and disposal of hazardous wastes. The Resource Conservation and Recovery Act (RCRA) establishes the cradle-to-grave concept. This concept involves the tracking of a hazardous waste from the point of generation through its final disposition. If found to be in violation of RCRA laws UAH could be fined up to $32,500 per day per violation. Additionally, criminal charges may be brought against individuals who knowingly violate state, federal, or local regulations. Failure to follow guidelines established within the UAH Hazardous Waste Management Plan could result in disciplinary action not to exclude termination of employment.

UAH at times produces more than 100 kilograms of hazardous waste in a month, and thus must meet the requirements regulating a small quantity generator, as established by the Resource Conservation and Recovery Act (RCRA). If at any time the University generates more than 1000 kilograms of hazardous waste or greater than one liter of acutely hazardous waste in one calendar month, the requirements for large quantity generators will be applied to the UAH HWMP. The applicable Environmental Protection Agency (EPA) regulations (40 CFR 261) are very demanding and require cooperation of all campus generators to meet compliance requirements.

Guidelines established in the plan are intended to create an awareness of chemical wastes that require special disposal and management procedures involved. Specific procedures for continuous operations (longer than one month) generating hazardous waste are to be developed by the overseeing laboratory director or facility manager and approved by the UAH Office of Environmental Health & Safety (OEHS). A good reference source for developing management procedures is "Achieving Compliance With Hazardous Waste Regulations Manual For Colleges and Universities"; Findley & Company, 1988, 2nd Ed. This book along with Material Safety Data Sheets should provide sufficient information to develop proper management procedures. Waste generators must contact the University’s OEHS at 824-2171 for specific and up to date advice on the disposal of any waste that is suspected of being regulated and/or hazardous.

The Hazardous Waste Management Plan shall serve as a guidance document for UAH employees to meet the challenges for providing a safe, environmentally sound, and unified response for chemical waste management. Note that certain laboratory procedures that have been acceptable in the past, including pouring chemicals down the drain (sewering) and evaporation of solvents in the fume hood, were performed with little regard to the q uantity of chemicals involved or the associated hazards. These disposal practices are unacceptable. The University administration has therefore made a policy decision to prohibit such practices. If you are currently sewering waste as part of a process, it is imperative that the OEHS be notified, so that the disposal process can be reviewed, and if necessary, permitted.

All UAH personnel involved in any waste disposal process must read and have a thorough knowledge of the procedures contained within this guidance document. Each individual's participation is critically important in making the UAH Hazardous Waste Management Plan reliable, safe, and efficient.

**3.0** **HAZARDOUS WASTE DISPOSAL REGULATIONS**

The federal government has aggressively approached the regulation of hazardous wastes. In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA), and four years later the Environmental Protection Agency (EPA) issued complex and stringent regulations to implement Subtitle C of RCRA. In 1984 the Hazardous and Solid Waste Amendments became law, substantially revising and extending the scope of RCRA. The federal government has established a comprehensive cradle to grave system of monitoring hazardous wastes from the point of generation through the point of disposal. This system is still undergoing changes, especially with regard to wastes that are classified as hazardous. Sanctions for noncompliance with EPA regulations are severe; they include criminal prosecution and fines of up to $32,500.00 per occurrence per day.

RCRA regulations are worded primarily to effectively control wastes produced by single waste-stream industrial generators, but are applicable to universities as well. UAH must not store, process, dispose of, transport, or offer for transport any hazardous waste without having received an EPA identification number. Nor can UAH offer hazardous waste to transporters or Treatment, Storage and Disposal Facilities (TSDFs) which have not received an EPA identification number. Before transporting hazardous waste to an off-site facility, all requirements for packaging, labeling, marking and placarding must be met. In addition, a uniform hazardous waste manifest must be properly executed and accompany each shipment. Any state that the hazardous waste shipment is transported through may also require a hazardous waste manifest specific for the state.

UAH can neither dispose of nor treat hazardous waste on-site. Only an EPA permitted disposal facility can legally landfill, incinerate, or recycle hazardous waste under the "cradle to grave" system. A waste generator never loses liability for environmental damage. For this reason, transporters and disposal facilities must be carefully chosen. The OEHS determines the TSDF through the bid system. Stringent criteria have been established to minimize environmental risk and University liability.

The EPA and the Alabama Department of Environmental Management (ADEM), who periodically perform inspections of hazardous waste collection procedures, documentation, and storage facilities, jointly enforce the regulations governing hazardous waste storage and disposal at UAH.

Regulations concerning small quantity generators are applicable to institutions or industries that generate between 100 and 1000 kilograms of hazardous waste per month. Generation at UAH may occasionally exceed 100 kilograms a month. Therefore UAH must comply fully with the regulations pertaining to small quantity generators. These regulations specify procedures and requirements for: 1) hazardous waste identification, 2) shipping, 3) reporting, 4) accumulation time limits, 5) general sampling and waste analysis, 5) personnel training, 6) emergency contingency planning, and 7) record keeping. UAH is allowed to accumulate hazardous waste on-site for a maximum of 180 days as long as Small Quantity Generator status (100 - 1000kg/month of hazardous waste or <1kg/month of acutely hazardous waste) is not exceeded. If at any time UAH produces more than 1000 kilograms per month of hazardous waste, regulations pertaining to Large Quantity Generator status must be implemented to include an accumulation time limit of 90 days. All waste must then be transported to a permitted off-site waste disposal facility for further treatment, disposal, or recycling.

Local, state and federal law forbids the discharge of any hazardous waste into the public sanitary sewer system. In addition, due to recent developments, it is policy of UAHthat no chemical wastes, laboratory or otherwise, be discharged into the sanitary sewer system. The OEHS is currently monitoring the effluent fromUAH laboratories. Discharge limits regulated by the City of Huntsville must not be exceeded at any time. Individuals in charge of laboratories found to be discharging chemical wastes into the sanitary sewer system may face disciplinary action not excluding termination of employment. Any questions concerning the discharge of materials into the sanitary sewer system must be directed to the OEHS.

In conclusion, by state and federal guidelines, UAH is required to manage hazardous wastes in a safe and environmentally sound manner. All generators of hazardous waste are held legally responsible for ensuring that the applicable regulations concerning the management and disposal of hazardous waste within your departments, laboratories, shops, or service areas are followed. The following sections are the basis of University policy.

**4.0** **HAZARDOUS WASTE MANAGEMENT SYSTEM**

Chemical waste generated at UAH is managed through a procedural system called the hazardous chemical waste management system. This system encompasses the identification, labeling, storage, transportation and disposal of materials that are regulated as hazardous waste.

The hazardous chemical waste management system must achieve three goals:

 1. Protection of employee health and safety

Proper evaluation, packing and labeling protects the health and safety of employees handling or potentially exposed to hazardous chemical waste.

 2. Reduction of hazardous chemical waste volume in the laboratory

The volume of hazardous chemical waste generated at the University can be reduced by:

 a. Disposal of non-hazardous wastes separately from hazardous chemical wastes.

 b. Utilizing procedures for chemical waste minimization (Lab Safety Manual).

 c. Recycling of unused and reusable chemicals in teaching and research laboratories.

 3. Compliance with regulations

To ensure that UAH is in compliance with federal, state, and local regulations regarding packing, labeling, storage, transportation, and disposal of hazardous chemical wastes.

Wastes requiring special consideration that are not hazardous chemical wastes are:

1. Non-hazardous solid waste includes garbage, rubbish, paper, cardboard, aluminum cans, and glass. These items are collected and disposed of by the Grounds Department of Facilities and Operations. Glass from laboratory operations must be thoroughly rinsed and or decontaminated and disposed of in a glass receptacle. Persons responsible for the laboratory must securely seal these containers prior to removal from the laboratory.

 2. Bio-hazardous waste includes, but is not limited to, tissue specimens, preserved specimens, and blood or other body fluids (Refer to the Biological Safety Plan for a complete listing). Departments generating bio-hazardous waste must have procedures in place for disposal of these wastes.

 3. Low level radioactive waste includes, but is not limited to, radioactive solid lab trash, radioactive aqueous based wastes, radioactive flammable solvent based wastes, and liquid scintillation solutions. Disposal of radioactive waste is managed under the guidelines established in the UAH Radiation Safety Program. For more information contact the OEHS.

Compounds identified in the Non-hazardous Chemical Registry, Appendix B, should also be disposed of via the hazardous waste program. If they are components of a mixture with hazardous materials, the mixture is considered hazardous waste.

**5.0** **IDENTIFICATION AND DISPOSAL OF WASTES**

The Office of Environmental Health and Safety is available to provide advice and guidance concerning the regulatory considerations of any proposed disposal. This office is also responsible for record keeping and arranging for the ultimate disposal of University generated hazardous wastes. A copy of the ADEM Administrative Code is available for review at the Office of Environmental Health and Safety or may be found at our Web Site located at [www.uah.edu/admin/oehs](http://www.uah.edu/admin/Fac/oehs).

**6.0** **HAZARDOUS WASTE DETERMINATION**

The question of primary importance to most generators is "What wastes require special consideration?" On the basis of EPA criteria and the ADEM, chemical waste is considered hazardous if it is a Listed Hazardous Waste as described in 40 CFR 261 (see Appendix A). A waste is also considered hazardous if it exhibits any of the following characteristics: 1) ignitability, 2) corrosivity, 3) reactivity, or 4) toxicity; as described in Sections 5.1.1 through 5.1.4.

Defined under RCRA Regulations as having one or more of the following characteristics:

**EPA Listed Wastes**–

* F list -nonspecific wastes (spent solvent wastes)–
* P list -acutely hazardous chemical products -unused/surplus materials–
* U list -unused/surplus chemical products

**6.1 Characteristics Waste:**–

* + 1. **Ignitable Waste**

Any waste having a flash point of less than 60°C (140°F) is classified as an ignitable waste. The only exception is an aqueous solution containing less than 24% alcohol where alcohol is the only ignitable constituent. This exception is made because alcohol solutions at this concentration exhibit low flash points and is not capable of supporting combustion.

 Conservative estimates of flash points should be made based on information found on the label of the container and on the Material Safety Data Sheets (MSDS). Secondary references such as the Merck Index, a chemical dictionary, or chemical supplier catalog may also be helpful. If the flash point is unknown, for instance with mixtures, it must be determined using a Pensky-Martens Closed Cup Tester, as specified in ASTM Standard D-93-79 or D-93-80. A Setaflash Closed Cup Tester as specified in ASTM Standard D-3278-78 may also be used.

 Any chemical designated as a flammable liquid for shipping purposes will exhibit the characteristics of ignitability. Chemicals shipped as combustible liquids have flash points between 60.5°C (141°F) and 93°C (200°F), and therefore may be classified as an ignitable waste depending on the material's actual flash point. Please note that there are different requirements for flammability classifications from EPA and the Department of Transportation (DOT).

 Solids are regulated as ignitable waste if the material is capable of ignition through friction, moisture absorption, or spontaneous chemical changes and, when ignited burns so vigorously and persistently that it creates a hazard. Any solid material identified as flammable on the container, shipping paper, or MSDS, should be disposed of as a regulated ignitable waste.

 RCRA also regulates oxidizers as ignitable wastes. The following common chemicals are

 characterized as oxidizers at certain concentrations:

 Chlorates

 Chromates

 Chromium Trioxide

 Dichromates

 Hydrogen Peroxide[[1]](#footnote-1)

 Perchlorates

 Peroxides

 Permanganates

 Persulfates

 **6.1.2 Corrosive Waste**

 Any waste that exhibits the characteristic of corrosivity is regulated as a hazardous waste. The regulations define this as any material with a pH of less than 2 or greater than 12.5, or any material which will corrode steel at a rate greater than 6 mm (0.25 in.) per year. Wastes included in this category are solutions of strong acids and bases in concentrations greater than 0.01N. RCRA regulations permit spent corrosives to be neutralized by the generator. Neutralization must occur in a container compatible with the chemical(s) to be neutralized and must take place at the site where the wastes are generated. Note: Any precipitated material produced during neutralization must be collected and properly characterized prior to disposal.

 **6.1.3 Reactive Waste**

 Disposal of waste that is shock sensitive, unstable, reacts violently with air or water, or generates H2S or HCN in pH condition between 2 and 12.5 is regulated as a reactive waste. With the exception of cyanide and sulfide solutions most reactive waste should only be disposed of with the assistance of explosives experts. The generation of these wastes must be avoided whenever possible. Some common chemicals that are classified as explosives include:

 Picric acid and other polynitroaromatics, in dry form

 Old ethers and other peroxide forming organics

 Peroxides, transition-metal salts

 Perchlorate salts

 Diazonium slats, when dry

 Chlorite salts of metals, such as AgClO2

 Azides, metal, nonmetal, and organic

Typical costs for disposing of reactive chemical wastes range from $50 to $100 per packaged pound. If containers of any of the above materials are located, contact the UAH Police immediately. Restrict area access and do not attempt to move these wastes.

 **6.1.4 Toxic** **Waste**

 A waste exhibits the characteristic of toxicity if, using the EPA's Toxicity Characteristic Leachate Procedure (TCLP), a representative sample of the waste contains any of the contaminants listed in Table 6-1 at the concentration equal to or greater than the regulatory limit.

Identification of materials regulated as hazardous waste is complicated by discrepancies in definitional guidelines used by the Environmental Protection Agency (EPA), Department of Transportation (DOT), and state agencies. The process of identification of hazardous chemical waste, therefore, must incorporate an understanding of the framework of EPA, DOT, and ADEM.

 **6.2 Acutely Hazardous Waste**

Stock reagents and stock reagent containers of certain chemical compounds are strictly regulated as acutely hazardous waste. Rinsate and dilute spill cleanup material contaminated with these compounds are regulated.

Appendix A provides a list of compounds regulated under this category. Anyone planning to generate or purchase any quantity of an acutely hazardous waste should contact the OEHS prior to doing so in order to develop an appropriate waste management plan. The regulations regarding acutely hazardous waste are much more stringent than those for other hazardous wastes are. For example, accumulation at the point of generation is limited to only one quart or 1kg of an acutely hazardous waste.

 **6.3 Organic Solvents**

RCRA identifies certain chemicals used as organic solvents under a specific set of regulatory requirements. At UAH, all organic solvents should be collected for disposal as hazardous waste.

######  Table 6-1

#  Toxicity Characteristic Contaminants

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 EPA HW #**1** Contaminant Regulatory limit(mg/L)

 D004 Arsenic 5.0

 D005 Barium 100.0

 D018 Benzene 0.5

 D006 Cadmium 1.0

 D019 Carbon Tetrachloride 0.5

 D020 Chlordane 0.03

 D021 Chlorobenzene 100.0

 D022 Chloroform 6.0

 D007 Chromium 5.0

 D023 o-Cresol 200.02

 D024 m-Cresol 200.02

 D025 p-Cresol 200.02

 D026 Cresol 200.02

 D016 2,4-D 10.0

 D027 1,4-Dichlorobenzene 7.5

 D028 1,2-Dichloroethane 0.5

 D029 1,1-Dichloroethylene 0.7

 D030 2,4-Dinitrotoluene 0.133

 D012 Endrin 0.02

 D031 Heptachlor 0.008

 D032 Hexachlorobenzene 0.133

 D033 Hexachlorobutadiene 0.5

 D034 Hexachloroethane 3.0

 D008 Lead 5.0

 D013 Lindane 0.4

 D009 Mercury 0.2

 D014 Methoxychlor 10.0

 D035 Methyl ethyl ketone 200.0

 D036 Nitrobenzene 2.0

 D037 Pentachlorophenol 100.0

 D038 Pyridine 5.0

 D010 Selenium 1.0

 D011 Silver 5.0

 D039 Tetrachloroethylene 0.7

 D015 Toxaphene 0.5

 D040 Trichloroethylene 0.5

 D041 2,4,5-Trichlorophenol 400.0

 D042 2,4,6-Trichlorophenol 2.0

 DO17 2.4.5-TP Silvex 1.0

 D043 Vinyl Chloride 0.2

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1EPA hazardous waste number.

2Cannot be differentiated; Total Cresol is used.

3Quantitation limit is higher than the regulatory limit. Quantitation number therefore becomes the regulatory limit.

**Typical Campus Generators of Hazardous Wastes**

**Chemistry**–most chemicals used in labs, spent solvents, corrosives, oxidizers, reactives, heavy metals, etc.

**Biology**–hazardous chemicals and state regulated biological waste

**Fine Arts** -art studios, art lab, metal casting and sculpture studios, woodworking shop, theater shop, photography lab–oil-based paint, solvents, cleaners, acids used for etching, fixer, glues, etc.

**Physical Plant** -grounds, maintenance, paint shop, boiler plant–cleaning solvents, glue/adhesives, pesticides, waste oil, oil-based paints, fluorescent bulbs, HID bulbs, PCB ballasts, thermostats, etc…

**Student Photography Lab**–photo fixers

**7.0** **WASTE MINIMIZATION**

To attain the UAH chemical waste management goals, the University strongly encourages its employees to utilize chemical waste minimization (waste reduction) techniques to reduce the volume and toxicity of chemical wastes produced at the University. An important benefit from waste minimization is that it reduces pollution that is directly related to quality of life indices. Even the best managed hazardous waste management programs produce quantities of pollution. Waste minimization decreases the expenses of ever-increasing chemical disposal costs. Generators should therefore modify procedures to eliminate or minimize the generation of hazardous waste by following common waste minimization techniques.

 **7.1 Minimizing Reactive Waste**

Laboratory safety can be enhanced by the elimination of generating reactive waste by purchasing peroxide forming organics in quantities that are assured of being used within a short period of time. Containers of the following chemicals should be labeled with the date they are opened and discarded and disposed of within three months of the open date.

 Diisopropyl Ether (isopropyl ether)

 Divinylacetylene

 Potassium metal

 Potassium Amide

 Sodium Amide

 Vinylidine Chloride

The chemicals listed below should be dated when opened and discarded within six months of that date:

 Acetyaldehyde Diethyl Acetal (acetal)

 Chloroprene (2-chloro-1,3-butadiene)

 Cumene (isopropyl benzene)

 Cyclohexane

 Cyclopentene

 Decalin (decahydronaphthalene)

 Diacetylene (butadiene)

 Diethyl ether (ether)

 Diethylene Glycol Dimethyl Ether (diglyme)

 Dioxane

 Ethylene Glycol Dimethylether (glyme)

 Ethylene Glycol Ether Acetates

 Ethylene Glycol Monoethers (cellusolve)

 Furan

 Methylacetylene

 Methylcyclopentane

 Methylisobutyl Ketone

 Styrene

 Tetrahydrofuran (THF)

 Tertalin (tetrahydronapthalene)

 Vinyl Ethers

In addition, containers of picric acid and similar compounds should be labeled with a checklist for monthly addition of water sufficient to form a paste equivalent to 10% moisture by weight. **Reactive wastes should not be moved.** Contact the OEHS to arrange for pick-up.

 **7.2 Minimizing Quantities**

It is common practice to order larger quantities of stock chemicals than necessary to take advantage of volume discounts. As a result, aging reagents or solvents are often left for disposal. This may result in disposal costs that are greater than the original savings. It is estimated that as much as 40% of laboratory waste may result from unused stock chemicals. Besides reducing disposal costs, smaller inventories reduce potential chemical exposure to personnel, thus minimizing the risks and severity of accidents.

 **7.3 Recycling**

Many materials treated as chemical waste are actually surplus chemicals that are reusable. To assist waste reduction it is recommended that unopened or unwanted chemicals are transferred to laboratories where they may be used. OEHS surpluses unopened or unwanted chemicals. These chemicals are saved until they are no longer re-usable or for three years, then they are dsiscarded with hazardous waste. Recycled chemicals are provided free of charge to any interested University department or research laboratory that may have a need for these chemicals.

Laboratories are required to develop schedules for routine inventory, cleaning, and removal of chemicals that are no longer needed. These chemicals are a liability and present a future expense as waste. The OEHS can determine if these chemicals are suitable for recycling or if they should be disposed of as hazardous waste.

**Note:** Certain chemicals are particularly desirable for recycling and include the following:

 **Solvents**

 Acetone

 Chloroform

 Dichloromethane (Methylene Chloride)

 Ethyl Acetate

 Formaldehyde

 Hexanes

 Isopropyl Alcohol

 Methanol

 Petroleum Ether

 Toluene

 Xylenes

 **Acids**

 Acetic Acid (glacial)

 Hydrochloric Acid

 Sulfuric Acid

 **Oxidizers**

 Bromine

 Potassium Chlorate

 Potassium Dichromate

 Silver Nitrate

 **7.4 Substitution**

Substitution of a non-hazardous or less hazardous chemical in place of a hazardous chemical is a commonly used method of reducing waste. A simple example of this is to change a cleaning agent from a toxic, flammable solvent to an appropriate soap or detergent solution. Other examples of substitution are: 1) the use of detergent instead of chromic acid in the cleaning of glassware; 2) the use of water based paints and cements over solvent based; 3) substituting non-halogenated, non-aromatic solvents for solvents such as benzene, methylene chloride, or carbon tetrachloride; and 4) avoiding the use of potentially explosive chemicals such as ethers or picric acid whenever possible.

 **7.5 Reduction of Scale**

Experimental laboratory procedures should be set up on as small a scale as possible. The use of methods requiring micro-quantities and equipment to handle these small volumes allow chemical reactions to be carried out on a much smaller scale than previously possible. For example, chromatographic techniques enable separation/purification of microgram quantities. Significant savings in chemicals, apparatus, and disposal costs can result.

 **7.6 Donations, Free Samples, and Government Surplus of Chemical Items**

UAH personnel must not accept chemical donations, free samples or purchase large quantities of government surplus of chemical items that will later become a disposal problem. These items should not be accepted unless there is an immediate need and adequate storage space available. No chemical should be accepted which has a limited shelf life unless for immediate use and in exact quantities. No University representative shall accept any chemical item: 1) without an accompanying Material Safety Data Sheet, and 2) in an original labeled container, that includes a shelf life date.

**7.7 Unknowns**

Unknowns are a special problem in laboratories, especially with regard to a change in management and/or personnel. Therefore, it is important to incorporate maintenance schedules for routine laboratory inventories and cleanup and closeout in departmental procedures. Outdated and unwanted chemicals must be disposed of prior to personnel changes that would result in the new management of a laboratory, shop, storage facility, etc. Laboratory closeout procedures are available in the Laboratory Safety Manual.

Disregard for laboratory closeout is a primary source of University unknown chemicals. When an unknown is discovered, an intensive attempt at identification must be made. Usually consulting individuals who may have worked in the laboratory where the unknown was found can help to identify the contents. If this fails, the compound must be analyzed. Charges for chemical characterization procedures sufficient to prepare an unknown chemical for disposal are assessed by the OEHS, the analysis and disposal of “unknowns” may be charged back to the department. Generation of unknowns should be avoided by performing periodic inspections of chemicals in the laboratory to ensure that each is properly labeled. All waste containers must be labeled with 1) the chemical name, 2) the concentration(s), 3) the volume, and 4) the date a chemical was added to a mixture. In addition, waste containers must meet all labeling requirements as found in the Laboratory Safety Manual.

**8.0 Hazardous Waste Collection Procedures**

 **8.1** **Segregation**

All waste stored together must be compatible. Guidelines for segregation of chemicals as found in the Laboratory Safety Manual must be adhered to. Incompatible waste (oxidizers and organic solvents, for example) generated by a single laboratory should be separated by storing these materials in separate cabinets or shelves. Generally, classes, i.e. ignitables, corrosives, toxics, and reactives, should be segregated. This information will be listed on the label of each chemical or on the MSDS. Mixing of wastes that represent different hazard classes must be avoided.

* + 1. **Hazardous Waste Accumulation Area**

All chemical waste containers must be stored in your laboratory’s designated hazardous waste accumulation area (HWAA). A standardized HWAA sign must be posted in the area. This will allow for easy inspection by regulatory authorities and clearly separates waste materials from chemicals in use.

**8.1.2 Closed Container Rule**

It is the responsibility of the lab/generator to control all the haz. waste generated in that lab. Also to make sure that proper procedures are followed at all times by students, workers, visitors etc. Storage containers must be tightly capped at all times except when pouring waste. Waste containers venting out to the atmosphere is prohibited by law.

 **8.2 Packaging and Containers**

Hazardous waste must be collected by generators in containers that meet Department of Transportation specifications. The same container or type of container in which a reagent was shipped will meet the specifications for shipment as waste. Laboratories purchasing solvents in bulk should package the solvent waste in one-gallon metal or glass containers with screw cap closures. Laboratories generating solvent waste in bulk may use five-gallon safety cans for the collection of waste in the laboratory. Laboratory waste containers will be picked up by OEHS personnel for bulk disposal into a 30 or 55-gallon drum. It is imperative for the safety of the OEHS employee that correct labeling is applied to the chemical waste container. UAH laboratories may have their waste containers picked up by calling OEHS at 824-2171. All empty waste containers will be returned to the generating laboratory. Chlorinated organic solvents must be kept separate from non-chlorinated organic solvents. Separation of organic chlorinated and non-chlorinated solvents is essential due to the higher expense associated with disposal of chlorinated solvents. Mixtures of organic solvent waste that contain any proportion of chlorinated solvent are considered chlorinated for disposal purposes. Low molecular weight ethers, such as diethyl ether, must be collected in a one-quart glass or metal container for incineration. Organic chemicals are generally collected in glass containers. Acids and bases should be collected and stored in glass or high-density polyethylene containers. Wastes containing hydrogen fluoride should also be stored and transported in DOT approved plastic containers. Powerful or toxic oxidizers should be collected in glass containers with Teflon lined caps. Waste for disposal should be placed in the smallest compatible container.

**Keep containers closed.** All chemical waste containers must be kept closed except when being used for the addition or removal of wastes. One of the most common cited safety hazards in University laboratories is open containers and labeling deficiencies.

* 1. **Labeling**

Each container must be labeled according to the guidelines outlined in the Laboratory Safety Manual. Chemical wastes must include the word waste on the label.

* 1. **Inspection**

Generators must inspect their accumulation areas to make sure that collection containers are clean, closed, properly labeled, segregated, and not leaking. In addition, generators must post a copy of the UAH hazardous waste management plan and inform all laboratory personnel of its location. The OEHS will conduct periodic inspections of laboratories known to generate hazardous waste to ensure compliance with this program and the hazardous waste regulations. Laboratory Audit forms can be found in the Laboratory Safety Manual.

 **8.5 Initiating Waste Removal**

To request a waste pick up, contact the OEHS at 824-2171. Be prepared to provide a chemical waste manifest. Manifests and instructions for completing them are found in the Laboratory Safety Manual Appendix D.

The OEHS coordinates the removal of chemical waste from the UAH campus a minimum of every 180 days, or as needed. In the event the UAH generator status increases from a small to a large quantity generator the frequency of disposal will increase to a minimum 90-day interval.

**Note: The accumulation of over 55 gallons of waste or one quart of acutely hazardous waste in any facility except the authorized UAH waste storage area is not allowed under RCRA regulations**. If a laboratory expects to generate quantities in excess of these limits within a three-month period, arrangements must be made with the OEHS to schedule pickups more frequently. The University’s hazardous waste disposal contractor will under special circumstances accept pressurized cylinders for disposal. Reusable cylinders should be returned to the supplier or manufacturer as soon as possible upon becoming empty as suppliers charge the University for rental of cylinders. Disposable cylinders should be completely emptied, the valve removed and the cylinder disposed of as solid waste.

**9.0** **EPA Empty Chemical Container Management**

The EPA provides a specific definition of empty for containers that held hazardous chemicals:

1. A container or an inner liner removed from a container that has held any hazardous waste, is empty if:

1. All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g. pouring, pumping, and aspirating, and
2. No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or
	1. No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size; or
	2. No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.

2. A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.

3. A container or an inner liner removed from a container that has held an acute hazardous waste listed is empty if:

1. The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate;
2. The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or
3. In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed.

**Laboratory Empty Chemical Container Management**

* It is the responsibility of the OEHS to approve the disposal of chemical containers. Contact the OEHS prior to disposing any chemical container.
* Empty containers that held acutely toxic hazardous wastes (P-list) are managed as hazardous waste and given to OEHS for disposal. DO NOT TRIPLE RINSE. Keep the containers closed at all times. These are collected and disposed of by the OEHS.
* Empty containers of highly odoriferous materials like -thiols or mercaptans must also be given to OEHS for disposal to avoid creating odor issues in the lab or hallways. Empty containers of odoriferous materials should be placed into a bag and stored inside a fume hood until OEHS collects them for disposal. Contact OEHS for disposal.
* All other containers - cross out original label with black marker and place your initials legibly on container.
* Remove and discard caps, place container in box designated for glassware disposal. When the box is full, secure the lid and tape it to the box. Place them in the hallway. The Custodial department removes these boxes.

**10. Miscellaneous Waste Rules**

**Compressed Gas Cylinders -** Disposal of compressed gas cylinders can cost hundreds of dollars depending upon the nature of the gas. Purchasing compressed gas in a returnable and/or refillable lecture bottle or cylinder could save money.

**Gas Cylinder Return -** It is the responsibility of the user/department to contact the manufacturer or vendor of the cylinder to confirm their policy on returns. Follow the instructions given by the vendor to ship or return the cylinder.

**Hazardous Waste Disposal -** Any gas cylinder that is not returnable will require management as a hazardous waste. The chemical gas mixture must be clearly identified on the "hazardous waste" label. The approximate pressure (psi) must also be noted on the label**4**

**Volatilization** - Volatile toxic substances should never be disposed of by evaporation in a fume hood. Such substances should be collected in suitable containers and properly labeled. Follow disposal procedures outlined in Section 8.0.

 **Asbestos** - Asbestos and asbestos contaminated materials may not be cleaned up by University personnel unless, 1) personnel have received 16 hour asbestos awareness training, 2) personnel have completed respiratory protection training, 3) personnel participate in the medical surveillance program, and 4) adequate exposure monitoring is performed.

**Sharps** - All needles from syringes must be removed before disposal and placed in a sharps container.

**Infectious** – Follow all guidelines as listed in the biological waste disposal guide.

 **Paints**

**Latex -** Water-based paints that are left over may be converted to a non-hazardous solid waste by adding a suitable filler material (vermiculite, cat litter) to completely solidify all paint –leave paint lid off can and dispose of completely solid and dry paint waste in the dumpster. **Preferred method is recycling through vendor by keeping all the left over paint in a good condition.** Wet latex paint should never be placed in the dumpster/trash.

**Oil-Base -** Oil-based left over paints must be collected and disposed of as hazardous waste. Store in designated UNIVERSAL WASTE STORAGE AREA, with appropriate label or pour into designated and labeled 55 gal waste drum. Do not mix in any two part or epoxy type paints!

Try to substitute oil- based paint with water-based paint whenever possible to reduce the amount of hazardous waste generated. If there is excess oil-based paint, try to use it up completely by applying an extra coat over the intended area.

**Bulbs, Lamps and Thermostats -** All fluorescent bulbs/lamps and HID bulbs, thermostats should be disposed of as UNIVERSAL WASTE and sent to a certified recycler. Label storage area and boxes of used bulbs. Follow all guidelines provided in the Universal Waste Management Plan.

**11.0** **EMERGENCY PROCEDURES**

Emergency procedures for spills and injuries are provided in the Laboratory Safety Manual and on the OEHS web site. UAH will utilize the Huntsville Fire Department HazMat Response Unit for emergency response actions involving unknown chemicals and spills requiring fully encapsulating personal protective equipment. All spills must be reported immediately to the UAH Public Safety Office at 824-6911. All laboratories must post UAH emergency phone numbers as provided in Appendix A of the Laboratory Safety Manual.

**12.0** **RESPONSIBILITY AND ENFORCEMENT**

The establishment and enforcement of the Hazardous Waste Management Plan is under the auspices of the OEHS which acts in an advisory capacity to the Assistant VP for Facilities and Operations. The OEHS will review policies, hear complaints and make final recommendations to the AVP regarding policies related to hazardous materials on campus.

Audits of hazardous waste accumulation areas on campus will be conducted on a periodic basis in a manner similar to those conducted by regulatory agencies. If there are any noted deficiencies, an audit report that includes an explanation of the deficiency will be sent to the person in charge of the laboratory. Although many deficiencies may seem trivial (open container), any infraction is a violation of the hazardous waste regulations and must be corrected. Laboratories with deficiencies will be re-audited within 30 days. For any uncorrected items found during follow-up audits, a **Notice of Deficiency** report will be sent along with the original and follow-up audit forms to the Department Head and person in charge of the laboratory. All inspection reports will be kept on file and will be available for state and federal regulatory authorities to review.

Due to the seriousness of non-compliance and/or complacency with existing Federal, State and local regulations, which may result in civil and/or criminal liabilities, the policies and guidelines presented in this document must be followed as a minimum. Failure to comply, blatant disregard, or multiple infractions may result in disciplinary action not excluding termination of employment.

**HWMP - APPENDIX A**

**Lists of Hazardous Wastes**

(1) General.

(a) A solid waste is a hazardous waste if it is listed below, unless it has been excluded from this list under 335-14-1-.03(2). (Alabama Administrative Code)

(b) ADEM has indicated its basis for listing the classes or types of wastes by employing one or more of the following Hazard Codes:

|  |  |
| --- | --- |
| Ignitable Waste | (I) |
| Corrosive Waste | (C) |
| Reactive Waste | (R) |
| Toxicity Characteristic Waste | (E) |
| Acute Hazardous Waste | (H) |
| Toxic Waste | (T) |

 (c) Each hazardous waste listed in this appendix is assigned an EPA or Alabama Hazardous Waste Number which precedes the name of the waste. This number must be used in complying with the notification requirements of Section 3010 of the RCRA and certain recordkeeping and reporting requirements under Chapters 335-14-3 through 335-14-6, 335-14-8, and 335-14-9.

(d) The following hazardous wastes listed in paragraphs (2) or (3) of this section are subject to the exclusion limits for acutely hazardous wastes established in 335-14-2-.01(5): EPA Hazardous Wastes Nos. F020, F021, F022, F023, F026, and F027.

(2) Hazardous wastes from non-specific sources.

1. The following solid wastes are listed hazardous waste from non-specific sources unless they are excluded under § 260.20 of 40 CFR and 335-14-1-.03(2) and listed in 335-14-2-Appendix IX. Only the items applicable to UAH at the time of printing this manual have been included. Refer to the CFR on-line for more information.

| **Hazardous Waste Number**  | **Hazardous Waste** | **Hazard Code** |
| --- | --- | --- |
| **Generic:** |  |  |
| F001 | The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. | (T) |
| F002 | The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. | (T) |
| F003 | The following spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above non-halogenated solvents, and a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.  | (I)\* |
| F004 | The following spent non-halogenated solvents: cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures. | (T) |
| F005 | The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.  | (I,T) |
| F007 | Spent cyanide plating bath solutions from electroplating operations.  | (R,T) |
| F008 | Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.  | (R,T) |
| F009 | Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.  | (R,T) |
| F010 | Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.  | (R,T) |
| F011 | Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.  | (R,T) |

 \* (I,T) should be used to specify mixtures containing ignitable and toxic constituents.

(b) Listing Specific Definitions:

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

2. (i) For the purposes of the F037 and F038 listings, aggressive biological treatment units are defined as units which employ one of the following four treatment methods: activated sludge; trickling filter; rotating biological contactor for the continuous accelerated biological oxidation of wastewaters; or high-rate aeration. High-rate aeration is a system of surface impoundments or tanks, in which intense mechanical aeration is used to completely mix the wastes, enhance biological activity, and

(I) the units employ a minimum of 6 hp per million gallons of treatment volume; and either

(II) the hydraulic retention time of the unit is no longer than 5 days; or

(III) the hydraulic retention time is no longer than 30 days and the unit does not generate a sludge that is a hazardous waste by the Toxicity Characteristic;

(ii) Generators and treatment, storage and disposal facilities have the burden of proving that their sludges are exempt from listing as F037 and F038 wastes under this definition. Generators and treatment, storage and disposal facilities must maintain, in their operating or other on-site records, documents and data sufficient to prove that:

(I) the unit is an aggressive biological treatment unit as defined in this subparagraph; and

(II) the sludges sought to be exempted from the definitions of F037 and/or F038 were actually generated in the aggressive biological treatment unit.

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

(ii) For the purposes of the F038 listing,

(I) sludges are considered to be generated at the moment of deposition in the unit, where deposition is defined as at least a temporary cessation of lateral particle movement, and

(II) floats are considered to be generated at the moment they are formed in the top of the unit.

(3) Hazardous wastes from specific sources.

 Solid wastes that are listed hazardous wastes from specific sources have not been listed in this reference document because at the time of printing none applied to UAH research and learning activities.

1. Commercial Chemical Products

Commercial chemical products that are in their pure state are out of date or off specification are hazardous wastes if listed below. Those wastes that have an EPA identification number beginning with the letter P are considered acutely hazardous. No more than 1 liter of acutely hazardous waste can be generated at UAH per month. In the event that more than 1 liter of acutely hazardous waste is generated in a one month period UAH will become a large quantity generator and must abide by the rules and regulations set forth by local, state and federal governmental authorities.

| **Hazardous 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) |
| P008 | 504-24-5 | 5-(Aminomethyl)-3-isoxazolol |
| P007 | 2763-96-4 | 4-Aminopyridine |
| P009 | 131-74-8 | Ammonium picrate (R) |
| P119 | 7803-55-6 | Ammonium vanadate |
| P099 | 506-61-6 | Argentate(1-), bis(cyano-C)-, potassium |
| P010 | 7778-39-4 | Arsenic acid H3AsO4 |
| P012 | 1327-53-3 | Arsenic oxide As2O3 |
| P011 | 1303-28-2 | Arsenic oxide As2O5 |
| 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-(methyl-amino)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 |
| P021 | 592-01-8 | Calcium cyanide Ca(CN)2 |
| P189 | 55282-14-8 | 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-pyrozol-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 |
| P029 | 544-92-3 | Copper cyanide Cu(CN) |
| 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 |
| 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 |
| P191 | 644-64-4 | Dimetilan |
| P043 | 55-91-4 | Diisopropylfluorophosphate (DFP) |
| P004 | 309-00-2 | 1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-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-hexachloro-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 | 172-20-8 | 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, 2beta,3alpha,6alpha,6beta,7beta, 7alpha)-, & metabolites |
| P044 | 60-51-5 | Dimethoate |
| P046 | 122-09-8 | alpha, alpha-Dimethylphenethylamine |
| P047 | 1534-52-1 | 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 |
| P066 | 16752-77-5 | Ethanimidothioic acid, N-[[(methylamino)carbonyl] oxy]-, methyl ester |
| P194 | 23135-22-0 | Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]-2-oxo]-, methyl ester |
| 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) |
| 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]oxl]phenyl]- |
| P199 | 2032-65-7 | Methiocarb |
| 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- |
| 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- |
| P190 | 1129-41-5 | Metolcarb |
| P066 | 16752-77-5 | Methomyl |
| P068 | 60-34-4 | Methyl hydrazine |
| P064 | 624-83-9 | Methyl isocyanate |
| P069 | 75-86-5 | 2-Methyllactonitrile |
| P071 | 298-00-0 | Methyl parathion |
| 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 cyanide Ni(CN)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 NO2 |
| P081 | 55-63-0 | Nitroglycerine (R) |
| P082 | 62-75-9 | N-Nitrosodimethylamine |
| P084 | 4549-40-0 | N-Nitrosomethylvinylamine |
| P085 | 152-16-9 | Octamethylpyrophosphoramide |
| P087 | 20816-12-0 | Osmium oxide OsO4, (T-4)- |
| P087 | 20816-12-0 | Osmium tetroxide |
| P088 | 145-73-3 | 7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid |
| P194 | 2315-22-0 | Oxamyl |
| P089 | 56-38-2 | Parathion |
| P034 | 131-89-5 | Phenol, 2-cyclohexyl-4,6-dinitro- |
| P128 | 315-18-4 | Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester) |
| P199 | 2032-65-7 | Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate |
| P048 | 51-28-5 | Phenol, 2,4-dinitro- |
| P047 | 1534-52-1 | Phenol, 2-methyl-4,6-dinitro, & salts |
| P202 | 64-00-6 | Phenol, 3-(1-methylethyl)-, methyl carbamate |
| P201 | 2631-37-0 | Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate |
| P020 | 88-85-7 | Phenol, 2-(1-methylpropyl)-4,6-dinitro- |
| P009 | 131-74-8 | Phenol, 2,4,6-trinitro-, ammonium salt (R) |
| 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 |
| P070 | 116-06-3 | Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino) carbonyl]oxime |
| P201 | 2631-37-0 | Promecarb |
| 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 | 154-11-5 | Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, and 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 | 157-24-9 | Strychnidin-10-one, and salts |
| P018 | 357-57-3 | Strychnidin-10-one, 2,3-dimethoxy- |
| P108 | 157-24-9 | 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 Tl2O3 |
| P114 | 12039-52-0 | Thallium(1) selenite |
| P115 | 7446-18-6 | Thallium(l) sulfate |
| P109 | 3689-24-5 | Thiodiphosphoric acid, tetraethyl ester |
| P045 | 39196-18-4 | Thiofanox |
| P049 | 541-53-7 | Thioimidodicarbonic diamide[(H2N)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 V2O5 |
| P120 | 1314-62-1 | Vanadium pentoxide |
| P084 | 4549-40-0 | Vinylamine, N-methyl-N-nitroso- |
| P001 | 181-81-2 | 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 Zn3P2, when present at concentrations greater than 10% (R,T) |
| P205 | 137-30-4 | Ziram |

 1 CAS Number given for parent compound only.

(f) The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in the Alabama Administrative Code, are identified as toxic wastes (T) unless otherwise designated. There is a small quantity exclusion that applies to these wastes. Contact the OEHS for more information.

 These wastes and their corresponding EPA Hazardous Waste Numbers are:

|  **Hazardous Waste No.** | **Chemical 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-trichloro phenoxy)- |
| 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':3,4]pyrrolo[1,2-a] indole-4,7-dione, 6-amino-8-[[(aminocarbonyl)oxy]methyl]- 1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1alpha, 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-dimethyl- |
| 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-dichloroethyli-dene)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 81-07-2 | 1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, & salts |
| U203 | 94-59-7 | 1,3-Benzodioxole, 5-(2-propenyl)- |
| U141 | 120-58-1 | 1,3-Benzodioxole, 5-(1-propenyl)- |
| U090 | 94-58-6 | 1,3-Benzodioxole, 5-propyl- |
| 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-, |
| U367 | 1563-38-8 | 7-Benzofuranol, 2,3-dihydro-2,2-dimethyl- |
| U064 | 189-55-9 | Benzo[rst]pentaphene |
| U248 | 181-81-2 | 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 (I) |
| U159 | 78-93-3 | 2-Butanone (I,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- (I,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 (I) |
| U136 | 75-60-5 | Cacodylic acid |
| U032 | 13765-19-0 | Calcium chromate |
| U238 | 51-79-6 | Carbamic acid, ethyl ester |
| U178 | 615-53-2 | Carbamic acid, methylnitroso-, ethyl ester |
| 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 |
| U373 | 122-42-9 | Carbamic acid, phenyl-, 1-methylethyl ester |
| U409 | 23564-05-8 | Carbamic acid, [1,2-phenylene bis(iminocarbonothiol)]bis-, dimethyl ester |
| U097 | 79-44-7 | Carbamic chloride, dimethyl- |
| U114 | 1111-54-6 | Carbamodithioic acid, 1,2-ethane-diylbis-, salts & esters |
| U062 | 2303-16-4 | Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro- 2-propenyl) ester |
| 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 |
| 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(I,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 | Chlornaphazine |
| 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 H2CrO4, 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-hexa-chloro-, (1alpha, 2alpha,3beta,4alpha,5alpha,6beta)- |
| 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 and 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) |
| U395 | 5952-26-1 | Diethylene glycol, dicarbamate |
| U108 | 123-91-1 | 1,4-Diethyleneoxide |
| U028 | 117-81-7 | Diethylhexyl phthalate |
| 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-Dimethylbenzylhydro-peroxide (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 (I) |
| U111 | 621-64-7 | Di-n-propylnitrosamine |
| U041 | 106-89-8 | Epichlorohydrin |
| U001 | 75-07-0 | Ethanal (I) |
| U174 | 55-18-5 | Ethanamine, N-ethyl-N-nitroso- |
| U404 | 121-44-8 | Ethanamine, N,N-diethyl- |
| U155 | 91-80-5 | 1,2,Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienyl-methyl)- |
| 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- (I) |
| 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 | Ethaninidothioic acid, N,N’-[thiobis[(methylimino) carbonyloxy]]bis-, 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- |
| U004 | 98-86-2 | Ethanone, 1-phenyl- |
| U395 | 5952-26-1 | Ethanol, 2,2’-oxybis-, dicarbamate |
| 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 (I) |
| U113 | 140-88-5 | Ethyl acrylate (I) |
| U238 | 51-79-6 | Ethyl carbamate (urethane) |
| U117 | 60-29-7 | Ethyl ether (I) |
| U114 | 1 111-54-6 | 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 (I,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-nitrosoureido)-, D- |
| U206 | 18883-66-4 | D-Glucose, 2-deoxy-2-[[(methyl-nitrosoamino)-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 H2S |
| 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,Naphthaquinone |
| 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)- |
| U182 | 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- |
| U411 | 114-26-1 | Phenol, 2-(1-methylethoxy)-, methylcarbamate |
| 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- |
| 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 | Phosphorous 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-trichloro-phenoxy)- |
| 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 |
| U194 | 107-10-8 | n-Propylamine (I,T) |
| U083 | 78-87-5 | Propylene dichloride |
| U387 | 52888-80-9 | Prosulfocarb |
| 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 | 1 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 SeS2 (R,T) |
| U015 | 79-34-5 | L-Serine, diazoacetate (ester) |
| See F027 | 115-02-6 | Silvex (2,4,5-TP) |
| U206 | 93-72-1 | Streptozotocin |
| U103 | 18883-66-4 | Sulfuric acid, dimethyl ester |
| U189 | 77-78-1 | Sulfur phosphide (R) |
| See F027 | 1314-80-3 | 2,4,5-T |
| U207 | 93-76-5 | 1,2,4,5-Tetrachlorobenzene |
| U208 | 95-94-3 | 1,1,1,2-Tetrachloroethane |
| U209 | 630-20-6 | 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[(H2N)C(S)]2S2, tetramethyl- |
| 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 | 59-73-9 | Urea, N-ethyl-N-nitroso- |
| U177 | 684-93-5 | Urea, N-methyl-N-nitroso- |
| U043 | 75-01-4 | Vinyl chloride |
| U248 | 1 81-81-2 | Warfarin, & salts, when present at concentrations of 0.3% or less |
| U239 | 1330-20-7 | Xylene (I) |
| U200 | 50-55-5 | Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxy-benzoyl)oxy]-, methyl ester, (3beta,16beta,17alpha,18beta, 20alpha)- |
| U249 | 1314-84-7 | Zinc phosphide, Zn3P2, when present at concentrations of 10% or less  |

1. CAS Number given for parent compound only.

**HWMP - APPENDIX B**

 **NON-REGULATED CHEMICAL WASTES

Common Non-Regulated Chemical Waste**

 **CAS# Chemical/Compound Name**

 50817B ASCORBIC ACID

 7440440A ACTIVATED CARBON

 58617A ADENOSINE, (-)-

 9002180A AGAR

 9012366A AGAROSE

 302727A ALANINE, DL-

 56417A ALANINE, L-

 338692A ALANINE-D

 UOFM1485A ALCONOX

 9005327A ALGINIC ACID

 9005383A ALGINIC ACID, SODIUM SALT

 12141467B ALUMINUM SILICATE

 10102713A ALUMINUM SODIUM SULFATE

 10043013S ALUMINUM SULFATE, Anhydrous solid

 9000026A AMBER

 9002260A AMBERLITE IRA-410CP

 56406B AMINOACETIC ACID

 9037223A AMIOCA

 7722761A AMMONIUM PHOSPHATE MONOBASIC

 7783280A AMMONIUM PHOSPHATE, DIBASIC

 528949A AMMONIUM SALICYLATE

 1002897A AMMONIUM STEARATE

 7783202A AMMONIUM SULFATE

 42739388A AMMONIUM VALERATE

 7631869C AMORPHOUS FUMED SILICA

 9037223B AMYLOPECTIN

 31566311B ARLACEL

 50817A ASCORBIC ACID, L-

 5794138A ASPARAGINE HYDRATE, (L)-

 617458A ASPARTIC ACID, DL-

 UOFM1252A ASPHALT

 112856A BEHENIC ACID

 12141467A BENTONITE

 2447576B BENEZENESULFONAMIDE, 4-AMINO

 N-(5,6-DIMETHOXY-4-PYRIMIDINYL)

 121346C BENZOIC ACID, 4-HYDROXY-3-METHOXY

 9012366B BIO-GEL A

 UOFM235A BIO-LYTE AMPHOLXLES AND GELS

 813934A BISMUTH CITRATE

 UOFM1252B BITUMEN

 7758874B BONE FLOUR

 507700a BORNEOL

 12069328A BORON CARBIDE

 7631869B CAB-O-SIL

 62544A CALCIUM ACETATE

 12007566A CALCIUM BORATE

 4714341A CALCIUM CARBONATE

 10043524A CALCIUM CHLORIDE

 10035048A CALCIUM CHLORIDE DIHYDRATE

 62339B CALCIUM DISODIUM EDTA

 62339A CALCIUM DISODIU VERSENATE

 299285A CALCIUM GLYCEROPHOSPHATE

 10102688A CALCIUM IODIDE

 814802A CALCIUM LACTATE

 142176A CALCIUM OLEATE

 137086A CALCIUM PANTOTHENATE

 7789777A CALCIUM PHOSPHATE, DIBASIC

 7758238A CALCIUM PHOSPHATE, MONOBASIC

 7758874A CALCIUM PHOSPHATE, TRIBASIC

 7778189A CALCIUM SULFATE

 10101414A CALCIUM SULFATE DIHYDATE

 1333864A CARBON DIOXIDE

 409212A CARBORUNDUM

 37225266A CARBOWAX

 9004324C CARBOXYMETHYL CELLULOSE

 9004324A CARBOXYMETHYL CELLULOSE, (Sodium Salt)

 461052A CARNITINE HYDROCHLORIDE

 7235407 CAROTENE, TRANS-BETA-

 UOFM1274A CASEIN HYDROLYSATE

 9005463A CASEIN, SODIUM COMPLEX

 68855549A CELITE

 9004324B CELLEX

 9004357A CELLULOSE ACETATE

 9004368A CELLULOSE ACETATE BUTYRATE

 UOFM1278A CELLULOSE PHOSPHATE

 9004346A CELLULOSE POWDER

 1306383A CERIUM (IV) OXIDE

 7647178A CESIUM CHLORIDE

 7440440C CHARCOAL OR

 16291966A CHARCOAL, ANIMAL BONE

 UOFM1146A CHELATING AGENT

 1406651A CHLOROPHYL

 604353A CHOLESTERYL ACETATE

 5808140A CHOLIC ACID

 62497A CHOLINE

 77929A CITRIC ACID

 68042B CITRIC ACID TRISODIUM SALT DIHYDRATE

 68647869A COCOANUT CHARCOAL

 8029434A CORN SYRUP

 9002602A CORTICOTROPIN

 60275A CREATININE

 68199A CYANOCOBALAMINE

 10016203A CYCLODEXTRIN HYDRATE, ALPHA-

 10016203B CYCLOHEXAAMYLOSE

 923320B CYSTINE

 923320A CYSTINE, DL-

 84526B CYTIDINE-3-MONOPHOSPHATE

 84526A CYTIDYLIC ACID, 3-

 71307A CYTOSINE

 UOFM1277A DEAE CELLULOSE

 9003989A DEOXYRIBONUCLEASE

 9011181A DEXTRAN SULFATE

 9004540A DEXTRAN T 70

 9004539A DEXTRIN

 492626B DEXTROSE

 68855549B DIATOMACEOUS EARTH

 7758794A DISODIUM PHOSPHATE

 3325006A DL-ALPHA-GLYCEROPHOSPHATE

 59927B DOPA, L-

 10034998B EPSOM SALT

 2338058A FERRIC CITRATE

 10045860A FERRIC PHOSPHATE

 9007732A FERRITIN

 299296A FERROUS GLUCONATE

 1345251A FERROUS OXIDE

 9001905A FIBRINOLYSIN

 9001336A FICIN

 61790532A FILTER AGENT, CELITE

 1343880A FLORISIL

 3385033A FLUNISOLIDE HEMIHYDRATE

 2321075A FLUOROSCEIN

 UOFM233A FOOD FLAVORINGS AND OILS

 26177855A FRUCTOSE 1,6-DIPHOSPHATE DS SALT

 57487A FRUCTOSE, D-

 643130A FRUCTOSE-6-PHOSPHATE

 8031183A FULLER'S EARTH

 59234A GALACTOSE, D-(+)

 526998B GALACTRIC ACID

 9000708A GELATIN

 77065A GIBBERELIC ACID

 9007834A GLOBULIN, GAMMA-

 299274B GLUCONIC ACID, POTASSIUM SALT

 604682A GLUCOSE PENTAACETATE, ALPHA-D-

 604693A GLUCOSE PENTAACETATE, BETA-D-

 492626A GLUCOSE, ALPHA-D

 50997A GLUCOSE, D-(+)-

 5996145A GLUCOSE-1-PHOSPHATE, ALPHA

 56860A GLUTAMIC ACID, L-

 56859A GLUTAMINE, L-

 110941A GLUTARIC ACID

 50812378A GLUTATHIONE S-TRANSFERASE

 819830A GLYCEROL 2-PHOSPHATE, DISODIUM SALT HYDRATE

 31566311A GLYCERYL MONOSTEARATE

 56406A GLYCINE

 9005792A GLUCOGEN

 556503A GLYCYLGLYCINE

 7782425A GRAPHITE POWDER

 73405A GUANINE

 118003A GUANOSINE

 9000015A GUM ARABIC

 9000059A GUM BENZOIN

 90000286A GUM GHATTI

 90000297A GUM GUAIC

 90000651A GUM TRAGACANTH

 10101414B GYPSUM

 9008020A HEMOGLOBIN

 9005496A HEPARIN

 51456A HISTAMINE

 56928A HISTAMINE DIHYDROCHLORIDE

 6341248A HISTIDINE MONOHYDROCHLORIDE MONOHYDRATE

 121346A HYDROXY-3-METHOXYBENZOIC ACID

 618279A HYDROXY-L-PROLINE, CIS-4-

 51354A HYDROXY-L-PROLINE, TRANS-4-

 9004620A HYDROXYETHYL CELLULOSE

 58639A INOSINE, (-)-

 87898A INOSITOL

 9005805A INULIN

 1637736A ISOCITRIC ACID, TRISODIUM SALT HYDRATE, DL

 73325A ISOLEUCINE, L-

 1332587A KAOLIN

 9008188A KERATIN

 UOFM160A KODALITH DEVELOPER PART A

 63423A LACTOSE, BETA-D-

 8006540A LANOLIN, WOOL FAT

 UOFM91A LECITHIN

 8002435A LECITHIN

 61905A LEUCINE, L-

 7447418A LITHIUM CHLORIDE

 1393926A LITMUS BLUE

 1393926 B LITMUS, INDICATOR

 9001632A LUSOZYME

 657272A LYSINE MONOHYDRACHLORIDE, L-

 56871A LYSINE, L-

 12650883A LYSOZYME

 142723A MAGNESIUM ACETATE

 546930B MAGNESIUM CARBONATE BASIC

 3409820A MAGNESIUM CARBONATE, BASIC

 7786303A MAGNESIUM CHLORIDE

 7757860A MAGNESIUM PHOSPHATE TRIBASE

 7487889A MAGNESIUM SULFATE

 10034998A MAGNESIUM SULFATE HEPTAHYDRATE

 9050366A MALTODEXTRIN

 6363537A MALTOSE MONOHYDRATE, D-

 69658A MANNITOL, D-

 59518A METHIONINE, DL-

 63683A METHIONINE, L-

 9004675A METHYL CELLULOSE

 15507763A METHYL HISTIDINE, L-1-

 111820A METHYL LAURATE

 368161A METHYL-L-HISTIDINE

 555306A METHYLDOPA

 617049A METHYMANNOSIDE, ALPHA

 526998A MUCIC ACID

 42200339A NADOLOL

 604591A NAPHTHOFLAVONE, ALPHA

 98920B NIACINAMIDE

 98920A NICOTINAMIDE

 53598A NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE

 59676A NICOTINIC ACID

 744044B NORIT A, ACTIVATED CARBON

 63428831A NYLON

 8049476A PANCREATIN

 9001734A PAPAIN

 9002646A PARTHYROID HORMONE

 9001756A PEPSIN POWDER

 UOFM77A PETROLATUM

 150301A PHENYLALANINE, DL-

 8002435B PHOSPHATIDYL CHOLINE, L-ALPHA

 9001905B PLASMIN

 9003490A POLY(BUTYL ACRYLATE), LIQUID

 25322683A POLY(ETHYLENE GLYCOL), SOLID

 9002884A POLY(ETHYLENE), SOLID

 9003274A POLY(ISOBUTYLENE), SOLID

 9003310A POLY(ISOPRENE), SOLID

 9011147A POLY(METHYL METHACRYLATE)

 25704181A POLY(SODIUM 4-STYRENESULFONATE

 9002895A POLY(VINYL ALCOHOL), SOLID

 9003332A POLY(VINYL FORMAL), SOLID

 9003398A POLY(VINYL PYRROLIDONE), SOLID

 9002817A POLYACETYL, SOLID

 9003014A POLYACRYLIC ACID, SOLID

 9003172A POLYBUTADIENE, CIS-, SOLID

 UOFM15A POLYOLS AND POLYURETHANES

 9003207A POLYVINYL ACETATE, SOLID

 127082A POTASSIUM ACETATE

 298146A POTASSIUM BICARBONATE

 1310618A POTASSIUM BISULFITE

 868144A POTASSIUM BITARTRATE

 584087A POTASSIUM CARBONATE

 7447407A POTASSIUM CHLORIDE

 866842A POTASSIUM CITRATE

 299274A POTASSIUM FORMATE

 868144B POTASSIUM HYDROGEN TARTRATE

 7681110A POTASSIUM IODIDE

 16788571A POTASSIUM PHOSPHATE DIBASIC TRIHYDRATE

 7778770A POTASSIUM PHOSPHATE MONOBASIC, ANHYDROUS

 7758114A POTASSIUM PHOSPHATE, DIBASIC, ANHYDROUS

 7778532A POTASSIUM PHOSPHATE, TRIBASIC

 7320345A POTASSIUM PYROPHOSPHATE, TETRA

 304596A POTASSIUM SODIUM TARTRATE

 7778805A POTASSIUM SULFATE

 12045782A POTASSIUM TETRABORATE, TETRAHYDRATE

 50865015A PROTOPORPHYRIN IX, SODIUM SALT

 83885B RIBOFLAVIN

 146178A RIBOFLAVIN-5-PHOSPHATE

 8050097A ROSIN, POWDER

 69727A SALICYLIC ACID

 11081406A SEPHADEX G-15, FOR GEL FILTRATION

 302841A SERINE, DL-

 56451A SERINE, L-

 7631869D SILICA GEL

 7699414A SILICIC ACID

 409212B SILICON CARBIDE

 7631869A SILICON DIOXIDE

 9016006A SILICONE RUBBER, SOLID

 127093A SODIUM ACETATE

 134032A SODIUM ASCORBATE

 144558A SODIUM BICARBONATE

 497198A SODIUM CARBONATE

 9038419A SODIUM CELLULOSE PHOSPHATE

 7647145A SODIUM CHLORIDE

 361091A SODIUM CHOLATE

 68042A SODIUM CITRATE

 7681825A SODIUM IODIDE

 13517061A SODIUM IODIDE DIHYDRATE

 10361032A SODIUM METAPHOPHATE

 143191A SODIUM OLEATE

 7558794A SODIUM PHOSPHATE, DIBASIC, ANHYDROUS

 10039324B SODIUM PHOSPHATE DIBASIC DODECAHYDRATE

10049215A SODIUM PHOSPHATE MONOBASICMONOHYDRATE

 10101890A SODIUM PHOSPHATE TRIBASIC DODECAHYDRATE

 10039324A SODIUM PHOSPHATE, DIBASIC

 7782856A SODIUM PHOSPHATE, DIBASIC, HEPTAHYDRATE 7558807A SODIUM PHOSPHATE, MONOBASIC, ANHYDROUS

 50813166A SODIUM POLYMETAPHOSPHATE

 9080799A SODIUM POLYSTYRENE SULFONATE

 7782696A SODIUM POTASSIUM PHOSPHATE

 304596B SODIUM POTASSIUM TARTRATE

 7722885A SODIUM PYROPHOSPHATE

 1344098A SODIUM SILICATE

 868188A SODIUM TARTRATE

 14986846A SODIUM TETRAPHOSPHATE

 12034343A SODIUM TITANATE

 7785844A SODIUM TRIMETAPHOSPHATE

 13472452A SODIUM TUNGSTATE

 50704A SORBITOL, D-

 87796A SORBOSE, L-(-)-

 UOFM1123A STAPHYLOCOCCAL ENTEROTOXIN

 9005258A STARCH, ELECTROPHORESIS

 9005849A STARCH, SOLUBLE

 9001621A STEAPSIN

 1633052A STRONTIUM CARBONATE

 57501A SUCROSE

 2447576A SULFADOXINE

 12070063A TANTALUM CARBIDE

 87694A TARTARIC ACID, L(+)-

 67038A THIAMINE HYDROCHLORIDE

 80682A THREONINE, DL-

 72195A THREONINE, L-

 9005849B THYODENE

 13463677A TITANIUM DIOXIDE

 7758874C TRICALCIUM PHOSPHATE

 7601549A TRISODIUM PHOSPHATE, INDICATOR

 9002077A TRYPSIN

 51672C TYROSINE, D-

 556025A TYROSINE, DL-

 60184A TYROSINE, L-

 9002124A URICASE

 58968A URIDINE

 72184A VALINE, L-

 121346B VANILLIC ACID

 121335A VANILLIN

 68199B VITAMIN B12

 83885A VITAMIN B2

 7695912B VITAMIN E

 59029B VITAMIN E

 83705A VITAMIN K-5

 69896A XANTHINE

 9010666A ZEIN

 7779900A ZINC PHOSPHATE

1. **Hydrogen Peroxide solutions are regulated as oxidizers only in concentrations greater than 8%.** [↑](#footnote-ref-1)