

Title: Hazardous Waste Minimization and Disposal Policy

Effective Date: November 2005

Revision Date: February 15, 2017

Issuing Authority: VP, Facilities and Construction Management

Responsible Officer: Director Environmental Health and Safety

PURPOSE OF THE POLICY

It is the intention of New York University to 1) comply with all federal, state and local laws which pertain to the minimization and disposal of hazardous waste; 2) ensure that human health and the environment are protected; 3) minimize the amount of hazardous waste generated; and 4) minimize the use of toxic materials.

SCOPE OF THIS POLICY

New York University is not a permitted hazardous waste Treatment, Storage and Disposal Facility (TSDF). The services of outside contractors are utilized to facilitate compliant hazardous waste disposal. These services are coordinated through the Environmental Services Department at 998-1450.

It is essential that all waste generators adhere to the procedures in this program. Lack of compliance could lead to legal complications and fines, safety and health problems, and the loss of an acceptable hazardous waste removal company. For more information, please visit our website at <http://www.nyu.edu/environmental.services/index.shtml>

WHO NEEDS TO KNOW THIS POLICY

All New York University academic, commercial and residential facilities.

PROCEDURES FOR IMPLEMENTATION

Responsibilities:

Department of Environmental Health and Safety

- developing and managing the Hazardous Waste Minimization and Disposal Program (the Program);
- providing the departments with information about the Program;
- assisting the departments in implementing the Program;
- periodically evaluating the effectiveness of the Program;
- maintaining hazardous waste and universal waste disposal records; and
- filing regulatory reports

Directors or Department Chairs

- ensuring that all employees who work with hazardous chemicals receive information about, and are trained according to, the Program; and
- ensuring that waste is collected in appropriate containers, stored and labeled properly and removed on a regular basis.

Facilities Manager, Department Manager, Construction Manager and Supervisors

- collecting, storing and labeling Universal Wastes in appropriate containers within their facilities;
- designating storage areas for Universal Wastes;
- ensuring that the waste is removed on a regular basis by contacting the appropriate party (Environmental Services) for removal.

Employees who work with Hazardous Material

- being familiar with the hazards of the chemicals they use;
- collecting, storing, labeling and transporting hazardous waste within the facility in accordance with the Program; and
- notifying their supervisors of exposures, spills or any other pertinent problems.

Maintenance and Housekeeping Personnel

Medical Surveillance

Complaint Response

POLICY DEFINITIONS

Hazardous Waste: A hazardous waste is a waste exhibiting any of the following characteristics:

Ignitability: Ignitable wastes are solids, liquids or compressed gases that burn readily. Liquids with flash points below 140o F are included in this category.

Corrosivity: Corrosive wastes are solids or liquids that dissolve metals or other materials, or burn the skin. Acids with a pH below 2 and bases with a pH above 12.5 are included in this category.

Reactivity: Reactive wastes are materials that are unstable or undergo rapid or violent chemical reactions with water or other materials. Potentially explosive materials and materials that react with air or water are included in this category.

Toxicity: Toxic wastes are materials in concentrations harmful to humans, animals or aquatic life.

Universal Waste: Universal wastes are particular hazardous wastes that the U.S. EPA has identified as common hazardous items, and are regulated by reduced administrative requirements in order to encourage recycling and proper disposal. For more information on Universal Wastes, see Universal Waste Minimization and Disposal Policy, No. 120. Universal wastes identified by the U.S. EPA and that may be found at NYU include:

Lamps: Lamps, or light bulbs, covered by these regulations include those that typically contain mercury, and sometimes contain lead. Examples of common types of lamps include fluorescent, high intensity discharge (HID), neon, mercury vapor, high- pressure sodium, and metal halide lamps.

Batteries: Batteries such as nickel-cadmium (Ni-Cd) and small sealed lead-acid batteries, which are found in many common items, including electronic equipment, mobile telephones, portable computers, and emergency back-up lighting are considered Universal Waste.

Thermostats: These include any temperature control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these temperature control devices.

UNIVERSITY POLICY

RESPONSIBILITIES

Waste Minimization:

1. Where feasible, departments using toxic chemicals should introduce less toxic substitutes.
2. Chemicals should be purchased in quantities that can be used within a reasonable period of time. They should not be "stockpiled".
3. Experiments should be conducted on the smallest scale possible.
4. Where feasible, unused surplus chemicals should be redistributed to other chemical users within the University. Environmental Services (998-1450) is available to assist in this process.
5. Where feasible, hazardous materials should be neutralized by trained personnel prior to disposal.

Containers/Waste collection:

1. Waste collection containers must be leak-proof, capable of being sealed tightly, and in good condition.
2. Hazardous waste should generally be collected in a container similar to the one in which the chemical was purchased.
3. Hazardous waste generators who have special container requirements should contact Environmental Services (998-1450) for assistance.
 - a. When an old reagent container is used for waste collection, the original label must be completely removed or defaced.
 - b. When glass bottles are used for the collection of liquid waste, they should be placed in a suitable outer container, such as a plastic bottle carrier, a plastic bucket or a deep tray.
4. Waste must not be stored in any container if such storage could cause the container to rupture, leak, corrode or otherwise fail. If unsure what type of container is most appropriate, consult the materials' MSDS or contact Environmental Services (998-1450) for assistance.
5. Wastes that could react together to cause fires, leaks, or other releases must not be collected in the same container.
6. Each waste container should be filled to approximately 90% of its capacity.
7. Containers must be securely closed except when waste is being added.
8. Halogenated and non-halogenated solvents should be collected in separate containers to facilitate recycling.
9. Heavy metals, such as mercury salts, should not be mixed with other wastes.

Labels:

1. An NYU Hazardous Waste label(s) must be completed and affixed to every container of hazardous waste. **A waste container that is to be filled over a period of time should have a label affixed at the start of filling.** Labels are available from Environmental Services. (See appendix "C" for example of label)
2. **The waste label must include the following information:**
 - a. The identity of the waste, identified with the chemical name that describes the contents. No abbreviations, structures or formulae should be used.
 - b. If the waste is a mixture, a list of all the components and the percentage of each (these should sum to 100%).
 - c. The primary hazards presented by the waste (e.g., reactive, toxic, ignitable, etc.).

- d. The name of the person responsible for the waste, their location and phone #.
3. For pure chemical waste that is, any chemical waste that has not been mixed or put into solution or removed from the original container, the green hazardous waste label can be used. Remember, this is pure product in the original container. (See appendix "C" for example of the green label.)

Storage/Removal:

1. Hazardous waste must be located near the point of generation and under the control of the person generating the waste.
2. Containers of hazardous waste must be inspected for leaks at least once a week.
3. Incompatible substances should never be stored in the same container.
4. In storage areas, containers of waste should be segregated into the following categories
 - a. Acids
 - b. Air reactive materials
 - c. Bases
 - d. Carcinogens
 - e. Explosive materials
 - f. Formaldehyde/Formalin
 - g. Halogenated solvents
 - h. Mercury (elemental)
 - i. Metals & their salts
 - j. Non-Halogenated solvents
 - k. Other toxic materials
 - l. Oxidizers
 - m. Polychlorinated biphenyls (PCBs)
 - n. Water reactive materials
5. Hazardous waste containers must be removed from laboratories and other waste collection areas as soon as possible after they are filled. The "DATE FULL" should be indicated on the hazardous waste label only when the container is full and ready for removal.
 - a. **Main Block Complex:** Hazardous waste can be delivered to the Hazardous Waste Accumulation Room, Brown Building Room 1158, on a twice-weekly scheduled basis. **Hazardous waste delivered to the University Hazardous Waste Accumulation Room must be disposed of within (90) days of entering the room, in order to comply with regulatory requirements.**
 - b. **Other Facilities:** When hazardous waste containers become full, Environmental Services (998-1450) should be contacted for removal arrangements. Three weeks notice is requested.
6. All hazardous waste must be removed from University facilities by a fully permitted hazardous waste contractor on a regular basis. Containers of waste must not be stored in the University Hazardous Waste Accumulation Area(s) for more than ninety (90) days.

Special Removal Projects

1. Environmental Services (998-1450) will coordinate hazardous materials handling and disposal for any of the following projects:
 - a. The renovation, relocation or closure of any laboratory storing or using chemicals;
 - b. Changes in management personnel of the laboratory;
 - c. Large waste removal projects; or
 - d. Reactive chemical disposal.
2. Environmental Services requests ninety (90) days notification to coordinate special hazardous waste removal activities. This provides sufficient time to arrange sampling, analysis and the evaluation of disposal options

3. The notification to coordinate special hazardous waste removal activities must include an inventory of all chemicals to be disposed of as hazardous waste. Please use the Hazardous Waste Pickup Request Form (see appendix "D" for an example of a completed form). Blank forms can be obtained by calling ES x81450 or online at <http://www.nyu.edu/environmental.services/pdfs/hwpickupform.pdf>
4. Surplus chemicals in good condition should be redistributed to other chemical users. Environmental Services is available to assist with this process.
 - a. Environmental Services must be contacted if chemicals are to be transported to another facility (see Section 8).
5. Every effort must be made to identify the composition of each waste. If the exact composition cannot be determined, the Principal Investigator (or Department) must provide Environmental Services with the following information:
 - a. Principal Investigator, primary research goal, materials used in research, building name, floor and room number where research has been conducted;
 - b. The reagents and protocols used which produced the hazardous waste;
 - c. Any special hazards of the compound(s) (e.g., air reactive, water reactive, temperature sensitive, carcinogenic, etc.); and
 - d. Any special handling instructions (e.g., shock sensitive, keep refrigerated, etc.)

On-site Transportation:

1. Prior to transport, waste containers must be securely capped or sealed and properly labeled per Section 5.1.
2. Hazardous waste should only be stored and transported in closed containers, impervious to and non-reactive with the chemicals contained. Waste should never be transported in open containers.
3. Personnel who transport waste must be trained in the hazards of the waste and the procedures to follow in the event of a spill.
4. Personnel who transport waste must wear appropriate personal protective equipment (PPE) when handling waste containers. Such PPE includes, but is not limited to, gloves, lab coats, and goggles.
5. Waste must not be transported on open shelf carts, since containers may fall off such carts. Waste should be transported on tray carts or carts with sides.
6. If waste is being transported in glass containers, care must be taken to insure against breakage. Carrying glass bottles without packing material, rubber buckets or other protective means is unacceptable.
7. Hazardous waste is not to be transported through student classroom areas.
8. Hazardous chemical waste shall not be transported through academic facilities during peak class changes.

Spills

1. Spill clean-up kits should be kept in or near areas where waste is generated. Kits should be ordered through the Department Laboratory Manager.
2. Hazardous chemical or waste spills must be cleaned up immediately by trained personnel. Spills must be reported to Public Safety (998-2222). Public Safety will then contact Environmental Services.
3. Personnel should wear appropriate protective clothing during clean up of hazardous chemical spills. At a minimum this should include gloves, lab coats and eye protection.
4. Environmental Services must be contacted to clean up any spill, which creates an inhalation hazard. Respirators must be worn during these clean-ups, in accordance with NYU's Respiratory Protection Policy [see Safety Policy No. 109].
5. Following spill clean-up, contaminated surfaces should be thoroughly cleaned with detergent solution and rinsed with clean water.
6. All contaminated absorbents and other materials, including PPE, used to clean up a hazardous material spill must be discarded as hazardous waste.

Drain Disposal

1. Solids, oil and other viscous substances should not be discarded into the sewer system.
2. Only water-soluble, non-hazardous laboratory chemicals, and urine or fecal homogenates, which meet the following criteria, and can be diluted with large volumes of water, may be flushed into the New York City sewer system:
 - a. **NON** toxic laboratory chemicals
 - b. **NON** flammable laboratory chemicals
 - c. **NON** explosive laboratory chemicals
 - d. **NON** reactive laboratory chemicals
 - e. **NON** corrosive laboratory chemicals (pH between 5 and 9.5 is non corrosive)
 - f. **NON** malodorous laboratory chemicals

If unsure whether the substance meets the above criteria, consult the substance's MSDS or call Environmental Service (998-1450).

Disposal of other substances is potentially dangerous and/or illegal and is strictly prohibited.

3. Sink Trap Disposal - In areas where hazardous chemicals are used near sinks, there is the potential for accidental spillage. Spills of hazardous substances into sinks can result in collection of hazardous wastes in the sink traps. Testing of the sink traps for hazardous waste characterization is required prior to disposal of the traps. This policy calls for all in-house and outside maintenance workers who remove traps to contact Environmental Services to evaluate the traps following trap removal. Environmental Services will arrange for a hazardous waste characterization to be performed on removed traps prior to disposal. Maintenance personnel shall ensure that removed traps are stored in sealed containers in a secure area pending notification by Environmental Services regarding testing results.

Specific Wastes:

1. The "Universal Waste Rule" is designed to reduce the amount of hazardous waste items in solid waste streams, encourage recycling and proper disposal of certain common hazardous wastes and reduce the regulatory burden on generators of these wastes. Labeling, storage and disposal requirements are different from the hazardous waste requirements. Building managers are responsible for ensuring that appropriate containers for these wastes are available, properly labeled and removed when full. Environmental Services should be contacted at 998-1450 to arrange for disposal, and if there are any questions. **Universal wastes may be accumulated for up to one year before disposal is required.** The "Universal Waste Rule" applies to the following categories:
 - a. **Lamps** – All lamps, or light bulbs, that typically contain mercury and sometimes lead fall into this Universal Waste category. Examples of common types of light bulbs include fluorescent, high intensity discharge (HID), neon, mercury vapor, high pressure sodium and metal halide. Such light bulbs must be placed in containers by type and marked with the words "**Used Light Bulbs**" and with the date that the first bulb was placed in the container. Broken light bulbs should be cleaned up immediately and placed in separate containers for broken light bulbs. Containers of "used light bulbs" should be placed in designated storage areas awaiting disposal. Containers and labels can be obtained by contacting Environmental Services (998-1450),
 - b. **Batteries** – All nickel-cadmium and small sealed lead-acid type batteries are included in this Universal Waste category. All such batteries should be placed in separate containers and marked with the

words **“Used Batteries”** and with the date that the first battery was placed in the container. Labels can be obtained by contacting Environmental Services (998-1450).

- c. **Thermostats** – All thermostats that contain liquid mercury ampules are considered Universal Waste. They should be placed in containers marked with the words **“Used Thermostats”** and with the date that the first thermostat was placed in the container. Labels can be obtained by contacting Environmental Services (998-1450).
2. CRTs (Computer Equipment)
 - a. All computer monitors, televisions, and many other electronic devices that contain heavy metals, are included in this category. These materials should be stored in a designated area until the next scheduled pick-up. They should never be discarded with the regular or bulk trash. Environmental services will coordinate with the contracted recycling company to pick-up the CRTs from the collection points. (Also see Computer Equipment Disposal & Surplus Policy No. 123).
Environmental Services should be contacted to arrange for disposal of all “Universal Waste”.
3. Controlled Drugs
 - a. Materials controlled by the Drug Enforcement Agency (DEA) must not be discarded through the Hazardous Waste Disposal Program. Information on the disposal of controlled substances may be obtained from the following office:
New York State Bureau of Controlled Substances
90-04 161 Street
Jamaica, N.Y. 11432
(718) 526-2626
4. Flammable Solvents
 - a. Waste flammable solvents that are not corrosive, malodorous or highly toxic should be collected in five (5) gallon steel safety cans. Waste formalin may also be collected in these containers.
 - b. New York City Fire Department regulations limit maximum flammable liquid storage for each laboratory, based on building/laboratory construction and automatic sprinkler protection. Environmental Services should be contacted to determine the amount of flammable liquid storage allowed for a laboratory.
 - c. Quantities of waste flammable liquids in excess of five (5) gallons must be approved by the Environmental Services Department (998-1450).
5. Gas Cylinders
 - a. Where feasible, compressed gases should be purchased in returnable cylinders. Removal of cylinders which are non-returnable is difficult to arrange and costly.
 - b. Returnable cylinders should be returned to the vendor. Information on vendor contacts may be obtained from Environmental Services (998-1450) or the Purchasing Department (998-1030).
 - c. When compressed gas cannot be purchased in returnable cylinders, Environmental Services (998-1450) should be contacted prior to purchase. Environmental Services will endeavor to make arrangements for empty cylinder removal to assure the cylinders can be disposed. (See Policy No. 104 for more information).
6. Acutely Hazardous Waste (EPA P Listed Waste)
 - a. As provided in 40 CFR 261.33, any residue remaining in a container or an inner liner from a container that has held any of the chemicals listed on the P list are considered hazardous wastes when they are discarded or intended to be discarded. This material must not be disposed of through normal University trash collection. Proper protocol for handling this situation are as follow:
 - b. The container or inner liner must be triple-rinsed using a solvent capable of removing the chemical.
 - c. By-products of the triple-rinse procedure must be collected into appropriate containers. All containers must be in good, non-leaking condition.
 - d. Documentation of estimated amounts and type of residual material, the amount of solvent used must be written on the hazardous waste label and affixed to the container.
 - e. Contact EH&S for proper disposal or transport to the Waste Room. Never dispose of any hazardous waste down the drain.

- f. Materials on the P list are as follows can be found in Appendix E
7. Aerosols
Aerosols must be disposed of as hazardous waste. Spray-cans no longer in use shall be stored in sealed metal containers and labeled with the NYU Hazardous Waste label. Labels can be obtained by contacting Environmental Services (998-1450).
 8. Infectious Waste
 - a. Infectious waste must not be discarded through the Hazardous Waste Disposal Program. Information on the disposal of infectious waste may be obtained from Environmental Services (998-1450) or refer to Regulated Medical Waste Policy No. 122.
 - b. Contact Environmental Services (998-1450) to arrange for the disposal of hazardous chemical waste that is also infectious.
 9. Organic Peroxides
 - a. Waste organic peroxides should not be transported to the designated storage facilities.
 - b. Waste organic peroxides must be stored in an explosion-proof refrigerator until their removal from the campus. Removal arrangements may be made by contacting Environmental Services (998-1450).
 10. PCBs
 - a. Prior to the removal of any PCB-containing equipment, Environmental Services (998-1450) must be contacted to arrange for disposal. Since there are stringent regulatory time restrictions for the disposal of PCBs, Environmental Services should be notified as soon as it is known that PCB-containing equipment will be discarded. (See Polychlorinated Biphenyls Policy No. 122).
 11. Photographic Chemicals
 - a. Photographic chemicals that contain silver halides, such as film developers, are processed through silver recovery appliances that remove the silver from solution before disposal to city sewer system. All other photographic chemicals should be disposed of at the Hazardous Waste Room or by contacting Environmental Services (998-1450).
 12. Radioactive Waste
 - a. Non-radioactive ENHANCE and Scintillation Liquid may be disposed of through the Hazardous Waste Disposal Program. Waste generators must sign a statement (see Appendix A) certifying that the waste is not regulated as radioactive waste. Forms may be obtained from the Supervisor for Radiation Safety (998-8480).
 - b. Radioactive waste must not be discarded through the Hazardous Waste Disposal Program. Arrangements for disposal may be made through the Supervisor for Radiation Safety (998-8480).
 - c. Smoke detectors must be handled as radioactive waste. Contact the Supervisor for Radiation Safety for disposal (998-8480).
 13. Rags
 - a. Rags or other solid absorbent wiping materials that are used to clean-up or come in contact with hazardous chemicals, solvents or oils that may exhibit the characteristics of a hazardous waste (ignitability, corrosivity, reactivity and/or toxicity), should be disposed as a hazardous waste. Waste rags should be accumulated in approved closed top containers, up to 21 gallons in capacity. A maximum amount of 55-gallons of hazardous waste, including waste rags can be accumulated at any one generation point. Containers must be labeled with the two-part Hazardous Waste Label described in Appendix C. Environmental Services should be contacted (998-1450) if there are any questions relating to the classification of waste rags and to arrange for disposal.
 14. Shock Sensitive Materials
 - a. Containers that may contain shock-sensitive or explosive materials should not be opened or moved by untrained personnel. A list of chemicals of concern is included as Appendix B. Environmental Services (998-1450) should be contacted for removal arrangements.
 15. Unknown Chemicals
 - a. Unknown chemicals should not be moved unless absolutely necessary, as these materials may be shock sensitive. The Environmental Services Department (998-1450) must be contacted prior to moving unknown chemicals. Every effort should be made to locate personnel responsible for

unidentified materials and to obtain as much information as possible about the materials. This information should be transmitted to Environmental Services (see Section 7.5).

16. Other Wastes

- a. There are many types of wastes that can be found in various areas around campus that should be collected as Hazardous Waste. The table below lists specific wastes that have their own policies and procedures for handling, storage and disposal.

POLICY TITLE	POLICY No.
Construction & Renovation Waste Disposal	121
Ethidium Bromide Safety	119
Lead Management	124
Mercury Safety	102
Neutralization Tank Cleaning	159
Ozone Depleting Substances	116

Other solid wastes may have the potential to be hazardous wastes. These may include but are not limited to empty paint cans, metal filings, painted, stained or treated woods and dusts, paper towels, absorbent materials, used gloves or any other solid wastes that could be potentially contaminated with hazardous materials, must have a hazardous waste characterization prior to disposal. Areas where hazardous materials are used, such as laboratories, art studios and workshops, photo-developing areas and maintenance areas must evaluate the solid wastes generated in their areas and determine what wastes may be contaminated with hazardous substances. Those wastes that may be contaminated must be evaluated and a hazardous waste characterization made prior to disposal. Environmental Services must be contacted to arrange for the appropriate evaluation prior to disposal. Suspect materials must be collected and stored in sealed containers, and placed in a secure area.

RELATED POLICIES

NYU Environmental Health and Safety Policy

RELEVANT RESOURCES

U.S. Environmental Protection Agency Resource Conservation and Recovery Act (RCRA)

EPA RCRA Regulations

40 CFR Parts 260-273 Hazardous Waste/Universal Waste

40 CFR Parts 239-259 Non-Hazardous Waste

New York State Department of Environmental Conservation

NYSDEC Hazardous Waste Regulations

6 NYCRR Parts 370-374, 376

Toxic Substance Control Act (TSCA)

TSCA

15 U.S.C. Chapter 53

APPENDIX A

DATE: _____

TO: Environmental Health & Safety

SUBJECT: Hazardous Waste

The hazardous waste listed below was checked for radioactivity on _____(date). This material is **not** regulated as radioactive waste.

HAZARDOUS WASTE: _____

GENERATOR'S NAME: _____

DEPARTMENT: _____

TELEPHONE: _____

BUILDING: _____

ROOM NUMBER: _____

(signed) _____

(print name) _____

APPENDIX B

EXPLOSIVE LABORATORY CHEMICALS

The following laboratory reagents are potentially explosive. Chemicals on this list must be discarded through the Hazardous Waste Disposal Program. This is not an exhaustive list. Contact Environmental Services if you have any questions.

acetyl peroxide
acetylene (pure)
ammonium picrate
ammonium nitrate
benzoyl peroxide
cumene peroxide
dinitrophenylhydrazine (dry)
dipicryl sulphide
dipicrylamine
ethylene oxide (pure)
lauric peroxide
methyl ethyl ketone peroxide
nitrogen trifluoride
nitroglycerin
nitroguanidine
nitromethane
picramide
picric acid
picryl sulphonic acid
picryl chloride
propargyl bromide
succinic peroxide
trinitroanisole
trinitrobenzene sulphonic acid
trinitrobenzene
trinitrobenzoic acid
trinitrocresol
trinitronaphthalene
trinitrophenol
trinitroresorcinol
trinitrotoluene
urea nitrate

APPENDIX B (con't)

CHEMICALS THAT MAY DETERIORATE TO A HAZARDOUS CONDITION

The following is a selection of chemicals that can deteriorate to a dangerous condition with age under common storage conditions. The degree of the hazard varies considerably with age and the exact situation. This is not an exhaustive list. Contact Environmental Services if you have any questions.

2-acetyl furan³
acetal³
acetaldehyde diethyl acetal³
acetyl peroxide¹
ammonium dichromate⁴
anethole³
anisaldehyde³
anisole³
benzoyl peroxide¹
2-butoxyethyl acetate³
iso-butyl ether³
n-butyl glycidyl ether³
n-butyl ether³
t-butyl hydroperoxide⁴
cellosolve³
chromium trioxide⁴
cumene³
cyclohexene³
cyclopentadiene³
cyclopentene³
1,1-diethoxyethane³
1,2-dimethoxyethane³
1,4-dioxane³
2,4-dinitrophenol¹
2,4-dinitrophenylhydrazine¹
decahydronaphthalene³
decalin³
di-allyl ether³
di-iso-amyl ether³
di-iso-butyl ether²
di-iso-propyl ether²
di-n-butyl ether³
di-n-propyl ether³
dibenzyl ether³
dicyclopentadiene³
diethyl azidoformate⁴
diethyl ether³
diethylacetal³
diethylazodicarboxylate¹
diethylene glycol dimethyl ether³
diglyme³

dihydropyran³

APPENDIX B (con't)

CHEMICALS THAT MAY DETERIORATE TO A HAZARDOUS CONDITION

dimethoxymethane³

diphenyl ether³

2-ethoxyethanol³

2-ethoxyethyl acetate³

ether³

ethyl ether³

ethyl cellosolve³

ethylene glycol monomethyl ether³

ethylene glycol monoethyl ether³

ethylene glycol dimethyl ether³

ethylene glycol monobutyl ether³

ethylene glycol ethyl ether acetate³

furan³

glycidyl n-butyl ether³

glyme³ iodine pentoxide⁴

isoamyl ether³

isobutyl ether²

isopentyl ether³

isopropyl ether²

isopropyl alcohol³ (> 70% conc.)

isopropyl benzene³

2-methoxyethanol³

magnesium perchlorate⁴

mercury fulminate¹

methyl cellosolve³

methyl ethyl ketone peroxide¹

methyl iso-butyl ketone³

methyl vinyl ketone³

methylal³

nitromethane¹

peracetic acid^{1,4}

perchloric acid⁴

picric acid¹

picryl chloride¹

picryl sulphonic acid¹

potassium (metal)¹

potassium amide¹

potassium chlorate⁴

potassium perchlorate⁴

propan-2-ol3
propargyl bromide1
propargyl chloride1

sodamide1
sodium amide1
sodium perchlorate4
sodium chlorate4
sodium metal dispersions1
sodium chlorite4
styrene3

tetrahydrofuran3
tetralin3
trinitrobenzene sulphonic acid1
trinitrobenzene1

urea nitrate4

vinyl pyridine3
vinyl acetate3
vinylidene chloride1

APPENDIX B (con't)

1. Can deteriorate to a shock-sensitive explosive. Take exceptional care if there is evidence of drying out, crystallization or contamination. It may be very dangerous to attempt to open the container.
2. Forms peroxides, especially on exposure to air and light, making the material liable to explode. Material more than one year old should be discarded, even if unopened. Containers should not be opened if there are solids visible around the closure or evidence of crystals inside.
3. Forms peroxides. If very old or obviously in poor condition treat as 2 (above).
4. High energy materials that are sensitive to the presence of dust. Clean the outside of containers before opening. If in doubt, do not open. Mixtures of the material with dust, paper or organics may ignite or detonate when exposed to friction (e.g., unscrewing the top of the container).

SOURCE: M.J. Pitt and E. Pitt. Handbook of Laboratory Waste Disposal. John Wiley & Sons, New York. 1985.

APPENDIX C

Hazardous Chemical Waste Label

<p style="text-align: center;">HAZARDOUS WASTE</p> <p style="text-align: center;">NEW YORK UNIVERSITY</p> <p style="text-align: center;">Environmental Services (212) 998-1450</p> <p style="text-align: center;">Check the Primary Hazard</p> <table border="1"><tr><td><input type="checkbox"/> Flammable</td><td><input type="checkbox"/> Toxic</td><td><input type="checkbox"/> Explosive</td></tr><tr><td><input type="checkbox"/> Reactive</td><td><input type="checkbox"/> Corrosive</td><td><input type="checkbox"/> Oxidizer</td></tr></table> <p>DATE FULL: _____ (Remove to Waste Room within 3 days of Date Full)</p> <p>COMPOSITION (IF MIXTURE, LIST ALL CONSTITUENTS AND %) NO FORMULAE or ABBREVIATIONS</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<input type="checkbox"/> Flammable	<input type="checkbox"/> Toxic	<input type="checkbox"/> Explosive	<input type="checkbox"/> Reactive	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Oxidizer
<input type="checkbox"/> Flammable	<input type="checkbox"/> Toxic	<input type="checkbox"/> Explosive				
<input type="checkbox"/> Reactive	<input type="checkbox"/> Corrosive	<input type="checkbox"/> Oxidizer				

Hazardous Chemical Waste Label
(Only Used for Pure Product in Original Container)

<p style="text-align: center;">HAZARDOUS WASTE</p> <p style="text-align: center;">Check the Primary Hazard</p> <p style="text-align: center;"><input type="radio"/> Flammable <input type="radio"/> Toxic <input type="radio"/> Explosive <input type="radio"/> Reactive <input type="radio"/> Corrosive <input type="radio"/> Oxidizer</p> <p>DATE:</p>

APPENDIX E
ACUTELY HAZARDOUS WASTE
EPA P LIST

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)
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	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	51-43-41,2	Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, (R)-
P046	122-09-8	Benzeneethanamine, alpha,alpha-dimethyl-
P014	108-98-5	Benzenethiol
P127	1563-66-2	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.
P188	57-64-7	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1).
P001	181-81-2	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	55285-14-8	Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191	644-64-4	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192	119-38-0	Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H-pyrazol-5-yl ester.
P190	1129-41-5	Carbamic acid, methyl-, 3-methylphenyl ester.
P127	1563-66-2	Carbofuran.
P022	75-15-0	Carbon disulfide
P095	75-44-5	Carbonic dichloride
P189	55285-14-8	Carbosulfan.
P023	107-20-0	Chloroacetaldehyde
P024	106-47-8	p-Chloroaniline
P026	5344-82-1	1-(o-Chlorophenyl)thiourea
P027	542-76-7	3-Chloropropionitrile
P029	544-92-3	Copper cyanide
P029	544-92-3	Copper cyanide Cu(CN)
P202	64-00-6m-	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
P043	55-91-4	Diisopropylfluorophosphate (DFP)
P004	309-00-2	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro- 1,4,4a,5,8,8a,-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)-
P060	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa- chloro- 1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5beta,8beta,8abeta)-
P037	60-57-12,7:3,	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,2alpha,3alpha,6alpha,6beta,7beta, 7alpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan.
P047	1534-52-1	4,6-Dinitro-o-cresol, & salts
P048	51-28-52,4-	Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramidate, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-04-4	Disulfoton
P049	541-53-7	Dithiobiuret
P185	26419-73-8	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino)- carbonyl]oxime.
P050	115-29-7	Endosulfan
P088	145-73-3	Endothall
P051	72-20-8	Endrin
P051	72-20-8	Endrin, & metabolites
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioic acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.
P066	16752-77-5	Ethanimidothioic acid, N-[[[(methylamino)carbonyl]oxy]-, 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	64-00-63	Isopropylphenyl N-methylcarbamate.
P007	2763-96-4	3(2H)-Isoxazolone, 5-(aminomethyl)-
P196	15339-36-3	Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196	15339-36-3	Manganese dimethyldithiocarbamate.
P092	62-38-4	Mercury, (acetato-O)phenyl-
P065	628-86-4	Mercury fulminate (R,T)
P082	62-75-9	Methanamine, N-methyl-N-nitroso-
P064	624-83-9	Methane, isocyanato-
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino)- carbonyl]oxy]phenyl]-, monohydrochloride.
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4- [[[(methylamino)carbonyl]oxy]phenyl]-
P050	115-29-7	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10- hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-84,7-	Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro- 3a,4,7,7a-tetrahydro-
P199	2032-65-7	Methiocarb.
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P016	542-88-1	Methane, oxybis[chloro-
P112	509-14-8	Methane, tetranitro- (R)
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-dimethyl-N'-[3-[[[(methylamino)- carbonyl]oxy]phenyl]-, monohydrochloride.
P199	2032-65-7	Methiocarb.
P069	75-86-52-	Methyl lactonitrile
P071	298-00-0	Methyl parathion
P190	1129-41-5	Metolcarb.
P128	315-8-4	Mexacarbate.
P072	86-88-4 alpha-	Naphthylthiourea
P073	13463-39-3	Nickel carbonyl
P073	13463-39-3	Nickel carbonyl Ni(CO) ₄ , (T-4)-
P074	557-19-7	Nickel cyanide
P074	557-19-7	Nickel cyanide Ni(CN) ₂
P075	154-11-5	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	62-75-9N-	Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramidate
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	23135-22-0	Oxamyl.
P089	56-38-2	Parathion
P034	131-89-5	Phenol, 2-cyclohexyl-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro-
P047	1534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P048	51-28-5	Phenol, 2,4-dinitro-
P047	1534-52-1	Phenol, 2-methyl-4,6-dinitro-, & salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt (R)
P128 (ester).	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate
P202	64-00-6Phenol,	3-(1-methylethyl)-, methyl carbamate.
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.
P092	62-38-4	Phenylmercury acetate
P093	103-85-5	Phenylthiourea
P094	298-02-2	Phorate
P095	75-44-5	Phosgene
P096	7803-51-2	Phosphine
P041	311-45-5	Phosphoric acid, diethyl 4-nitrophenyl ester
P039	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester
P094	298-02-2	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester
P044	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester
P043	55-91-4	Phosphorofluoridic acid, bis(1-methylethyl) ester
P089	56-38-2	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester
P040	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester
P097 O,O-dimethyl ester	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl]
P071	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester
P204	57-47-6	Physostigmine.
P188	57-64-7	Physostigmine salicylate.
P110	78-00-2	Plumbane, tetraethyl-

P098	151-50-8	Potassium cyanide
P098	151-50-8	Potassium cyanide K(CN)
P099	506-61-6	Potassium silver cyanide
P201	2631-37-0	Promecarb
P070	116-06-3	Propanal, 2-methyl-2-(methylthio)-O [[methylamino]carbonyl]oxime
P203	1646-88-4	Propanal, 2-methyl-2-(methyl-sulfonyl)-, O- [[methylamino]carbonyl] oxime.
P101	107-12-0	Propanenitrile
P027	542-76-7	Propanenitrile, 3-chloro-
P069	75-86-5P	ropanenitrile, 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)-, & 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, & 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(I) selenite
P115	7446-18-6	Thallium(I) sulfate
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester