

HAWAII COMMUNITY COLLEGE

UNIVERSITY OF HAWAII



Hazardous Materials/ Hazardous Waste Management Program

**Hawaii Community College
Hazardous Material and Hazardous Waste
Management Program**


September 2000
Revised December 2002

Dear Colleagues

The Hawaii Community College has a fundamental obligation to safeguard the health, safety, and welfare of our students, personnel, and the visiting public whenever they participate in an official College activity. It is the policy of the College to provide for and maintain, through implementation of environmental, health and safety programs, conditions and practices that provide safe and healthful campus environment. In keeping with this commitment, the Hazardous Material and Hazardous Waste Management Program was developed.

The revised Hazardous Material and Hazardous Waste Management Program (HMMP) is designed to ensure the protection of College personnel and the environment from potential hazards associated with hazardous materials and hazardous waste. It will also assist the college in achieving compliance with applicable federal, state and county regulations. The HMMP is for your reference in managing hazardous materials and hazardous waste at Hawaii Community College.

It is our responsibility as members of the University of Hawaii community to be committed to ensure the environmental, health and safety of our campus. We are committed to follow and comply with the Hazardous Material and Hazardous Waste Management Program. This HMMP will be effective immediately.


Sandra Sakaguchi
Provost
Hawaii Community College
December 2002

Purpose

This program outlines requirements for the management of hazardous materials and the disposal of hazardous waste at Hawaii Community College (Hawaii CC) and West Hawaii Community College (West Hawaii CC). These requirements are based on federal, state and county regulations. Adherence to this program will ensure the proper management of hazardous materials and hazardous wastes, reduce overall costs (by reducing disposal cost and minimizing the use of hazardous materials), and avoid potential civil and/or criminal liabilities. This plan is applicable to both Hawaii CC and West Hawaii CC. Failure to comply with these requirements may subject Hawaii CC, West Hawaii CC and/or individuals to fines and civil or criminal prosecution. Additionally, proper management of hazardous materials reduces disposal costs.

Applicability

This program applies to all personnel that purchase, store, transport, manage, use, and dispose of hazardous materials and/or hazardous wastes.

Responsibilities

All applicable personnel must become familiar with the hazardous materials in their area and with the Hawaii CC Hazardous Materials and Hazardous Waste Management Program. They will contact the UHCC Environmental Safety Specialist, Ph: 808-956-9464 or University of Hawaii Environmental Health and Safety Office (EHSO); Ph: 808- 956-8660 if in doubt about the requirements of this program or about how to properly dispose of waste.

I. RESPONSIBLE PERSONNEL

A. All personnel must

- Become familiar with the hazardous materials in their area and with this HAWAII CC hazardous material and hazardous waste management program.
- Use authorization to purchase form (Attachment 1) to obtain approval for the purchase of hazardous material.
- Submit an authorization to use hazardous material form (Attachment 2) for grant approval
- Provide a semi-annual inventory of hazardous materials (Attachment 3) and a annual inventory of hazardous wastes (Attachment 4).
- Store and label waste properly.
- Properly make a waste determination according to federal and state regulations.

B. Designated program coordinators

The Directors of Administrative Services (DOAS) is responsible for overall coordination of the Hazardous Material and Hazardous Waste Management Program. The DOAS shall ensure that the Program Coordinators listed below have current training.

The following personnel are designated as responsible for the implementation of this program in their respected areas of responsibility:

Agriculture	Agriculture Instructor(s)
Apprenticeship	Apprenticeship Coordinator
Art	Art Instructor
Automotive	Automotive Instructor(s)
Auto Body	Auto Body Instructor(s)
Biological Sciences	Biology Instructor (s)
Carpentry	Carpentry Instructor(s)
Ceramics	Ceramic Instructor
Diesel Mechanics	Diesel Instructor(s)
Drafting	Drafting Instructor(s)
Electricity	Electrical Instructor(s)
Electronics	Electronic Instructor(s)
Food Service	Food Service Instructor(s)
Nursing	Nursing Instructor(s)
Welding	Welding Instructor(s)

All above personnel are required to attend the initial Hazardous Waste Generator training and the annual refresher Hazardous Waste Generator training. EHSO will provide the training and upon satisfactory completion of the training will issue training certificates.

This Hazardous Material Management Program is subject for review annually to maintain current practices, methods, and regulatory requirements. Revisions to this program require EHSO approval.

II. HAZARDOUS MATERIAL MANAGEMENT

- A. **Training certificates.** HAWAII CC program coordinators must submit copies of their training certificates to the DOAS prior to purchasing or disposing of hazardous chemicals.
- B. **Authorization to purchase hazardous materials.** The DOAS approval is required for the purchase or requisition of all hazardous materials. The Authorization to Purchase Hazardous Materials Form (Attachment 1), must be complete and submitted to DOAS at the time any purchase order for hazardous materials is initiated. If approved, a copy of the form will be provided to you for attachment to your purchase order or requisition. The purpose of the DOAS approval is to ensuring the safe storage, handling and eventual disposal of the material while minimizing the cost to HAWAII CC. All request should be submitted for approval for purchase two weeks prior to purchasing chemicals.
- C. **Approval to use hazardous materials.** As part of the grant approval process (ORS Form 5, item 4 under PI certification) a specific form for the use of certain hazardous materials has been developed (Attachment 2). This form is similar to those already in place for the use of radioactive and biohazard materials.
- D. **Inventory Control Procedures**
1. **Semi-Annual Inventory of Hazardous Materials.** HAWAII CC programs that store hazardous materials are required to submit semi-annual inventories to the DOAS. The semi-annual inventory form, Attachment 3, will help HAWAII CC manage existing hazardous materials, monitor on-going usage, and prevent unnecessary accumulation. Inventories are due October 1 and May 1 or each year. As part of the inventory procedure, HAWAII CC programs are required to inspect the condition of all hazardous material containers to ensure that hazardous materials are stored in containers which are in good condition and which are properly labeled.
 2. **Annual Inventory of Hazardous Wastes.** HAWAII CC programs that generate hazardous wastes are required to submit annual waste inventories to the DOAS. Waste inventory forms (Attachment 4) shall be submitted to the DOAS on May 1. The DOAS will submit a copy of the inventory form to the UHCC Environmental Safety Specialist so that the DOT hazard classes and EPA waste codes can be added. As part of the inventory procedure, HAWAII CC programs are required to inspect the condition of all hazardous material containers to ensure that hazardous materials are stored in containers which are in good condition and which are properly labeled.

3. **Inventory of Special Wastes.** While certain wastes are not hazardous, they also cannot be disposed of in a sanitary landfill or down the drain, and may necessitate special disposal procedures. These non-hazardous wastes should be included in Waste Inventory Form for proper disposal.
- E. **Audit Program.** The audit program will assist in maintaining a safe working and academic environment. DOAS and/or the Environmental Health and Safety Office will conduct periodic audits of the campus to review the current operations with respect to all applicable safety, health and environmental policies and regulations. The following issues will be reviewed: hazardous material storage, hazardous and acutely hazardous waste accumulation, Material Safety Data Sheet availability, hazardous waste accumulation areas, and emergency plans. A report indicating any corrective actions that are necessary and suggesting any improvements will be provided by the DOAS.
- F. **Storage of Material Safety Data Sheets (MSDS).** All chemical manufacturers and suppliers of hazardous chemicals must furnish an MSDS with each initial shipment and furnish new MSDS information upon request. MSDSs generally contain information such as the following:
- Chemical composition
 - Physical characteristics and chemical properties
 - Fire, explosion and reactivity hazards
 - Health hazard information and symptoms of overexposure
 - Protective equipment recommendations
 - Handling and storage precautions
 - Cleanup and disposal procedures
 - Emergency first aid procedures

Federal and state law requires that written MSDSs must be kept in proximity to the area where products are stored and must be readily available to all employees at any time. MSDSs must also be available for emergency personnel or any state or federal agency that requests them. It is the responsibility of the supervisor in each area to ensure that all MSDSs are kept in an accessible storage area and are updated. If an MSDS is missing or incomplete, it is likely that you can obtain a copy from the Internet or from the manufacturer. Requests for missing MSDSs should be made in writing and sent by fax, and a copy of the request should be kept in your file.

III. HAZARDOUS WASTE MANAGEMENT

A. **Waste Determination.** It is the responsibility of the generators to make the waste determination for their waste. The responsibility is to determine whether the waste is a hazardous waste (RCRA hazard waste or non-RCRA hazardous waste) or a non-hazardous waste. All waste determinations must be made according to the specific federal and state definitions summarized in Attachment 5. The UHCC Environmental Safety Specialist (808-956-9464) can and will assist you in making a waste determination. A waste determination must be done as soon as waste is collected into a waste container. The waste determination will be documented on the Chemical Waste Tag. Most facilities produce wastes consistent in character. Therefore what is often the most confusing aspect of the regulations – characterization and classification – becomes a periodic verification function.

1. **What is a waste?** A waste is:

- A useless by-product of an operation
- A material which is to be disposed
- Any material which can no longer be used
- A manufacturing or process by-product

2. **How do I determine if a waste is hazardous?**

a. **Contact the Environmental Health and Safety Office.** The UH EHSO Office (808-956-8660) or the Environmental Safety Specialist for the Community Colleges (808-956-9464) will assist you in making a determination of whether a waste is hazardous.

b. **Review the Material Safety Data Sheets.** MSDSs may provide information that will assist you and the EHSO office in making a proper hazardous waste determination.

B. **Accumulation of Wastes.**

1. **Limits on Waste Generation.** To maintain the status of conditionally exempt small quantity generator, HAWAII CC **may not** generate more than 100 kilograms (approximately one half of a 55-gallon drum, 27 gallons, or 220 pounds) of hazardous waste. HAWAII CC also may not generate more than 1 kilogram (2.2 pounds) of acute hazardous waste in one month.

2. **Limits on Waste Accumulation.** To maintain the status of conditionally exempt small quantity generator, HAWAII CC **may not** have more than 1000 kilograms (approximately five 55-gallon drums, or 275 gallons, or 2200 pounds) of total accumulated hazardous waste and no more than 1

kilogram (2.2 pounds) of accumulated acute hazardous waste at any time.

3. **Designation of Waste Management Area.** HAWAII CC programs generating hazardous waste should establish a safe area near the point of generation for the temporary storage of that waste before disposal by a licensed contractor. The area should be neat and orderly, containers should not be stacked upon one another or containers of liquid should not be stored on their side. The DOAS will hire a licensed hazardous waste contractor to transport the waste to an EPA permitted hazardous waste treatment, storage and disposal facility.

C. **Storage of Hazardous Waste**

1. **Waste Containers**

- a. **Labeling.** All hazardous waste containers must be labeled with the Chemical Waste Tags (Attachment 6). The Chemical Waste Tag must be filled out as soon as waste is collected into a waste container.
 - Please fill out tags completely. All information requested on the tag is necessary to assist in the proper labeling of the waste container. Any incomplete tags are just as dangerous as no tags at all.
 - Chemical constituents are required with the estimated.
 - Please provide pH for all liquids.
 - Hazardous waste determination. Please check the appropriate items on the tag to accurately describe the waste characteristic.
- b. **Closed Containers.** All hazardous waste containers must remain closed except when waste is being added to them.
- c. **Containers in Good Condition.** Containers used for wastes must be in good condition (i.e. no rusting, cracks or structural defects). If a container is broken or begins to leak, the material must be transferred to a container in good condition. The material composition must be compatible with the material to be stored and incompatible materials must not be stored in proximity to one another. Package materials in sturdy cardboard boxes or plastic waste containers. Cushion the material in the containers to prevent breakage. If cardboard boxes are used which originally held other chemicals, the name of the chemical must be covered over or

defaced. Failure to do so constitutes improper marking as to contents and is an EPA and OSHA regulation violation.

Secondary Containment. Secondary containment are required for containers of liquid waste under the following circumstances:

1. When waste is stored in 55-gallon drums
2. When the waste is stored on the floor.
3. When the waste is stored in a fume hoods that have a drain.
4. When the waste is stored within four (4) feet of sink
5. When necessary to separate incompatibles or high hazard wastes.

Plastic tubs can be used as secondary containments. Consult with the UHCC Environmental Safety Specialist (808-956-9464) regarding appropriate containment when a 55-gallon drum is used to collect waste.

- d. **Separate Incompatible Materials/Waste.** Incompatible materials shall be segregated by HAZARD CLASS, i.e. Toxic-Reactive-Ignitable-Corrosive-Oxidizers. Examples of incompatible materials are: acids/bases, organics/oxidizers, and flammable liquids/oxidizers. Unknowns and high hazard materials such as cyanides, organic peroxides, pyrophorics, water reactives and explosives shall be packaged separately regardless of quantity. Training will be provided to assist in segregation of incompatible materials. If there are any questions, please call the UHCC Environmental Safety Specialist (808-956-9464) for assistance.

D. Hazardous Waste Disposal. The disposal of hazardous waste requires that a licensed hazardous waste contractor be hired to dispose of the waste. Please submit the Annual Hazardous Waste Inventory form to the DOAS. All waste that you wish to have disposed must be listed on the form.

1. Drain disposal prohibited. No hazardous materials/waste may be disposed of down the drain. All liquid prior to drain disposal (except known clean water) shall be reviewed prior to any drain disposal. In addition, Hawai'i County Ordinances prohibit disposal of the following additional items down the drain:
 - Fats and greases, if their concentration and physical dispersion results in separation and adherence to sewer structures.

- Storm water, surface water, groundwater, roof runoff, subsurface drainage, cooling water, swimming pool water or other unpolluted drainage.
- Liquid or vapor having a temperature of >150 degrees Fahrenheit.
- Any water or waste containing >100 ppm, by weight, of fat, oil or grease.
- Gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas.
- Garbage that has not been properly shredded. Garbage from commercial food establishments is prohibited.
- Ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure or any other solid or viscous substance capable of causing obstruction to the flow in sewers.
- Water or wastes having a pH lower than 5.5 or higher than 9.5 having any other corrosive property capable of causing damage to the sewage works or its personnel.
- Water or wastes containing a toxic or poisonous substance of sufficient quantity to injure or interfere with any sewage treatment process or cause a hazard to humans or animals.
- Noxious or malodorous gas or explosive liquids or substance capable of endangering public property and safety, or creating a public nuisance.

IV. EMERGENCY SPILL PROCEDURES

You must have a specific spill emergency plan and provide information and training to individuals working in your area regarding the plan. It is a good idea to post the emergency procedures and emergency phone numbers in the work area. Personnel working with hazardous chemicals should be able to answer the question: "What would I do if this material spilled?"

Spill kits with instructions, absorbents, reactants, and protective equipment should be available to clean up minor spills. A **minor spill** is one that does not spread rapidly, does not endanger people or property except by direct contact, does not endanger the environment, and the workers in the area are capable of handling safely without the assistance of safety and emergency personnel. **All other chemical spills are considered major.**

The following are general procedures for the handling of spills.

1. In the event of a spill, attend to anyone who may have been contaminated or hurt, if it can be done without endangering yourself.
2. Turn on the fume hood(s) and open windows where this can be done without endangering yourself.
3. If flammable materials are spilled, de-energize electrical devices if it can be done without endangering yourself.

A. Minor Spills

- If you have any questions regarding spill clean up requirements, please contact the Director of Administrative Service (974-7614), Community College Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660).
- Ensure protective apparel is resistant to the spilled material. Neutralize acids and bases, if possible using neutralizing agents such as sodium carbonate or sodium bisulfate.
- Control the spread of liquids by containing the spill. Absorb liquids by adding appropriate absorbent materials, such as vermiculite or sand, from the spill's outer edges toward the center. Paper towels and sponges may also be used as absorbent material, but this should be done cautiously considering the character of the spilled material.
- Collect and contain the cleanup residue and any materials used to clean up the spill by scooping them into a plastic bucket or other appropriate container and properly disposing of the waste as hazardous waste.
- Decontaminate the area and affected equipment. Ventilating the spill area may be necessary.
- Document what happened, why, what was done, and what was learned. Such documentation can be used to avoid similar instances in the future. Major incidents are almost always preceded by numerous near misses.

B. Major Spills

- If the spill is major, evacuate and secure the area from all personnel.
- If flammable liquid is spilled, secure all ignition sources.

- If the spill is major contact the Fire Department (911), Director of Administrative Service (974-7614), UHCC Environmental Safety Specialist (808-956-9464) Environmental Health and Safety Office at the UH Manoa Campus (808-956-8660).

C. Reporting Requirements

- After the initial spill response, contact the Director of Administrative Service (974-7614), UHCC Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) to determine whether there are any federal or state reporting requirements. Some reporting obligations are immediate, and must be made within 24 hours.

V. SPECIFIC INFORMATION ON THE DISPOSAL OF VARIOUS MATERIALS/WASTE

The individual possessing or generating the material/waste retains the primary responsibility for the material/waste. The Director of Administrative Service (974-7614), UHCC Environmental Safety Specialist at (808-956-6494) and the Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) provides information on requirements and assistance in handling the materials. Specific information on various types of materials is given below.

BATTERIES: Lithium, nickel/cadmium or mercury batteries shall be stored at the hazardous waste accumulation site for contract disposal. Vehicle batteries are recyclable and arrangements with local vendors can be made. Operations and Maintenance handle disposal of batteries from State vehicles.

BIOLOGICAL MATERIALS: For biohazardous wastes, refer to the published University biohazardous waste disposal guidelines or contact the EHSO Biological Safety Officer (808-956-3197) for information concerning the handling and disposal of biological materials. Remains from dissections shall be properly disposed of.

COMPRESSED GASES: Compressed gas cylinders should be returned to the vendor. A return agreement with the vendor should be included in the contract. Without such an agreement the return or disposal of the cylinders is difficult and very costly, contact the UHCC Environmental Safety Specialist (808-956-9464) for assistance.

CONTROLLED SUBSTANCES: The handling and disposal of controlled substances (i.e. drugs and other substances listed in 21 CFR 1308) are the responsibility of the permit holder.

FLUORESCENT LIGHT BALLASTS: The HAWAII CC Auxiliary Services Department (974-7369) removes non-leaking ballast. Ballast which may contain PCBs, contact the UHCC Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for assistance concerning leaking ballast or any ballast known to contain PCBs.

FLUORESCENT LIGHT TUBES: The HAWAII CC Auxiliary Services Department (974-7369) removes and disposes of fluorescent light tubes.

HAZARDOUS CHEMICALS AND HAZARDOUS WASTE: The “College” will hire a contractor to dispose of hazardous wastes. Efforts should be made to determine if others could use excess hazardous chemicals in the department or facility prior to submitting for contract disposal. Chemicals considered non-hazardous waste (see "Non-hazardous Waste" below) could be disposed of in the municipal sanitary landfill or sanitary sewer.

MERCURY: Items containing functional mercury (e.g. light switches, barometers and thermometers) shall be stored at a hazardous waste accumulation site for contract disposal.

MIXED WASTE: Mixed waste is defined as materials that possess a radioactive or biological hazard as well as an unrelated chemical hazard (e.g. potassium dichromate solution contaminated with Carbon-14). Contact the Environmental Health and Safety Office at the UH Manoa campus Radiation Safety (808-956-6475) as applicable for assistance in the proper disposal of these materials.

NON-HAZARDOUS WASTE: Listed below in Table 1 are typical laboratory chemicals that are not considered hazardous wastes by the U.S. Environmental Protection Agency. If the facility refuse contract permits the disposal of the solid chemicals in Table 1, then they can be disposed of as ordinary trash. The containers should be labeled and marked “non-hazardous” to mitigate any concern by the refuse collectors. Alternatively, the materials can be collected for disposal as non-hazardous waste in the periodic waste disposal shipments. Liquid chemicals or chemical solutions can be disposed of to the sanitary sewer, if the requirements of the applicable county ordinances or the facility industrial waste water discharge permit are met. Alternatively, the materials can be collected for disposal as non-hazardous waste in the periodic waste disposal shipments.

TABLE 1: NON-HAZARDOUS WASTE

Sugars (e.g., sucrose, glucose, mannose)	Silica Gel
Starch	Alumina (aluminum oxide)
Naturally occurring Amino Acids	Calcium Fluoride
Citric Acid and its Sodium, Potassium, Magnesium, Calcium and Ammonium Salts.	Lactic Acid and its Sodium, Potassium, Magnesium, Calcium and Ammonium, Salts
Sodium, Potassium, Calcium, Strontium, and Ammonium Sulfates	Sodium, Potassium, Calcium, Magnesium, Strontium and Ammonium Phosphates
Sodium, Potassium, Magnesium and Ammonium Chlorides	Sodium, Potassium, Magnesium, and Calcium Borates
Silicon Dioxide	Sodium, Potassium, Ammonium Acetates
Boron, Magnesium, Copper Oxides	Sodium, Potassium, Magnesium, Calcium, and Ammonium Carbonates

OILS AND TRANSFORMER FLUID: The DOAS will assist with disposal of used pump oil. Used motor oil is recyclable through local vendors. Operations and Maintenance handle used motor oil from University vehicles.

Transformer fluid will be handled on a case-by-case basis, contact the Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for assistance. The following requirements apply to used oil:

- Used oil may only be stored in containers that are in good condition and not leaking.
- Containers, aboveground storage tanks, and fill pipes must be labeled or marked clearly with the words **“Used Oil.”**
- Upon detection of a release of used oil, a generator must stop the release, contain the used oil, clean up and manage properly the used oil and other materials, and if necessary, repair or replace any leaking used oil storage containers. If a release of used oil occurs, contact the Director of Administrative Services (974-7614), Environmental Safety Specialist (808-956-9464), Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for

information regarding cleanup, and special regulatory reporting requirements which may apply.

PAINT WASTE (Auto body): Excess paint or waste paint containing cadmium, chromium, lead or mercury will not be recycled but will be disposed of as hazardous waste. Other paint waste generated by the Auto body Program will be stored in a marked container labeled, "Paint Waste for Recycling". On a regular basis, the paint waste will be processed through the paint solvent recycler. After recycling, the remaining sludge will be checked for ignitibility. If the sludge is ignitable, it will be disposed of as hazardous waste. If it is not ignitable, it will be disposed in the municipal sanitary landfill. Thinner solvent extract can be used as product.

PHOTOGRAPHIC CHEMICALS: Photographic fixer will must be stored in capped container and labeled, "Fixer for Recycling". Photographic fixer solution may contain silver salts after use. Silver is an EPA toxic characteristic waste and must be recycled or disposed of as a hazardous waste. If your facility has a silver recovery unit, it should be used to process the used fixer in accordance with the manufacturing instructions. This would include ensuring that the effluent from the unit meets the requirements for safe drain disposal and that the unit filter, when full, is sent for recycling. If your facility does not have a silver recovery unit, there are contractors who will furnish one for a fee or for the value of the silver recovered. Alternatively, the used fixer solution can be handled and disposed of as a hazardous waste.

RADIOACTIVE MATERIALS: Refer to the University Radiation Safety Manual or contact the UH Manoa campus (808-956-8660) for information concerning the proper handling and disposal of radioactive material.

SHARPS AND GLASSWARE: Glassware not contaminated with radiological, biological or hazardous chemical material shall be placed in a puncture resistant container labeled "glass" or "broken glass". It will be picked up by the Auxiliary Services staff and disposed of. Refer to the published University biohazardous waste disposal guidelines or contact the Environmental Safety Specialist (808-956-9464) for information on the handling and disposal of sharps or glassware contaminated with biological or infectious material. Refer to the University Radiation Safety Manual or contact the Environmental Health and Safety Office at the UH Manoa campus (808-956-8660) for information on the proper handling and disposal of sharps or glassware contaminated with radioactive material. Glassware or sharps contaminated with hazardous chemicals should be rinsed to decontaminate them and then disposed of as non-contaminated glassware or sharps (i.e. placed in a sharps container). Broken glassware contaminated with hazardous chemicals should be placed in a puncture resistant container (e.g. bottle, plastic container or can over-pack), labeled with the name of the chemical and disposed of as hazardous chemical waste.

VI. HAZARDOUS WASTE MINIMIZATION

A. Buying Chemicals in Smaller Amounts.

The "large economy size" may cost less to buy, but disposal costs, in most cases, are several times the initial cost of the material. Many of the bottles of excess or waste chemicals sent for disposal are full or 3/4 full. Everyone needs to try to accurately estimate the amount of a chemical they expect to use.

B. Recycling and Redistribution

Efforts should be made to find someone in the laboratory or department who can use the hazardous material before it is submitted to the DOAS as waste for contract disposal.

C. Use of Less Hazardous or Non-hazardous Materials

The following provides some examples of the use of less hazardous or non-hazardous materials; everyone is encouraged to think of some others that may be applicable to their research or instructional materials.

Cleaning Solutions: Chromerge, chromic acid and dichromate cleaning solutions are not desirable from a waste disposal prospective, as they cannot be made non-hazardous and are expensive to dispose of. There are many non-toxic biodegradable cleaning solutions that can be used instead of chromic acid. For extremely dirty glassware a product called Nochromix, which uses sulfuric acid and an organic oxidizer in place of chromium can be used. While this requires neutralization of the acid for ordinary disposal, it is far less costly to dispose of than chromium solutions. A number of alternative cleaning solutions are listed below. These are all available from Fisher Scientific, who has the University contract for laboratory supplies. NoChromix, Alconox, Liquinox liquid detergent, Citranox, Fisherbrand sparkleen, and FL-70 Concentrate.

Drying Agents: The safest common drying agents are calcium chloride, silica gel, molecular sieves and calcium sulfate (Drierite). These are recommended because of their low toxicity and stability. Drying agents that pose varying degrees of hazard and disposal problems include:

Phosphorus pentoxide which generates highly corrosive phosphoric acid and heat on contact with water. This material also has to be disposed of as a hazardous.

Magnesium perchlorate (Dehydrite) which is a strong oxidizer and may cause fires or explosions on contact with organic materials. This material has to be disposed of as a hazardous waste.

Thermometers: Mercury thermometers should be replaced with non-mercury thermometers whenever possible. Broken mercury thermometers create spills that are a potential health hazard, time consuming to clean up, and are one of the most expensive

hazardous wastes to dispose of. Non-mercury thermometers with equivalent accuracy are available for temperature ranges of -20 to 250 degrees Centigrade. Check your laboratory supply catalog for more information. If mercury containing equipment is used, then a mercury spill kit and personnel knowledgeable in its use is required in the laboratory or facility.

**HAWAII COMMUNITY COLLEGE - UNIVERSITY OF HAWAI'I
PROCUREMENT AUTHORIZATION FOR HAZARDOUS MATERIALS**

An approved (signed) copy of this form must accompany any request, purchase order or requisition for the procurement of all hazardous materials.

NAME: _____
(Instructor/Program Coordinator)

DEPARTMENT: _____ PHONE NO., EXT.: _____
LOCATION: _____ PURCHASE ORDER NO.: _____

Chemical Name	Solid/Liquid/Gas	Amount (gallon, lbs)	Usage Plan	Estimated Usage Period

Instructor/Program Coordinator _____ DATE: _____
(Signature)

Dean/Director _____ DATE: _____
(Signature)

PLEASE SEND THE COMPLETED FORM TO: Director of Administrative Services (DOAS).

FOR DOAS USE ONLY

DOAS APPROVAL: _____ DATE: _____

APPROVAL NO.: _____

ATTACHMENT 1

**UNIVERSITY OF HAWAII AT MANOA
ENVIRONMENTAL HEALTH & SAFETY OFFICE
HAZARDOUS MATERIAL MANAGEMENT PROGRAM
APPROVAL FOR THE USE OF HAZARDOUS MATERIAL
For Research Grants**

1. **Principal Investigator:** _____
2. **Project Title:** _____
3. If your project will involve any of the types of hazardous materials listed below, please provide a list of the chemical name(s) and approximate amounts of the materials to be used, information on how the material will be used and stored, also information on any special safety measures that will be taken. The information is needed to ensure the materials are stored, used and disposed of in accordance with the applicable Federal and State regulations.
 - a) **Explosive materials** (e.g., ammonium perchlorate, picric acid or picrates, azides, acetylides or fulminates of heavy metals, aromatic di or tri nitro compounds such as dinitrophenol or trinitrotoluene, nitroglycerine, RDX and tetrazene).
 - b) **Water reactive chemicals** (e.g., alkali metals such as sodium, potassium or lithium; metal hydrides such as lithium aluminum hydride, sodium borohydride or lithium hydride; calcium carbide, ethyldichlorosilane and phosphides).
 - c) **Flammable or poison gases** (e.g. methane, ethylene, chlorine, phosgene and hydrogen sulfide).
 - d) **Organic peroxides** (e.g., methyl ethyl ketone peroxide or peracetic acid).
 - e) **Highly toxic materials** (e.g., cyanides, osmium tetroxide, phosphorus, strychnine, pentaborane, or any material with a LD₅₀ [oral rat] of 50mg/kg or less).
 - f) **Flammable liquids** (i.e., materials with a flash point of 140 degrees Fahrenheit or less) in quantities of 60 gallons or more at any one time.

ATTACHMENT 2

4. If your project will involve the use of controlled substances (i.e., materials listed in 21 CFR 1308 by the U.S. Drug Enforcement Agency such as cocaine, chloral hydrate, morphine, and sodium barbital), provide the number of the required Federal or State permit for possession and use of these materials.

5. I agree to: (1) comply with the University of Hawaii at Manoa Hazardous Material Management Program (HMMP) requirements and any additional requirements provided by the Environmental Health and Safety Office that are necessary to ensure compliance with Federal and State regulations, (2) inform the Environmental Health and Safety Office if there are any amendments to the project which affect the types of hazardous material listed above, and (3) transfer or properly dispose of all my hazardous material as specified in the HMMP prior to leaving the University or transferring to a different laboratory. I believe the above information is accurate and complete.

PRINCIPAL INVESTIGATOR

DATE

DEAN/DIRECTOR

DATE

PLEASE SEND THE COMPLETED FORM TO: HSO 2040 East-West Road Attention: Hazardous Material Management Officer. The Hazardous Material Management Officer may be contacted at 956-3198 or Fax 956-3205, if you have questions.

6. The use of the hazardous materials listed above is approved subject to the special requirements listed below.

HAZARDOUS MATERIAL MANAGEMENT OFFICER

DATE

SPECIAL REQUIREMENTS:

College _____

**UNIVERSITY OF HAWAI'I
Community College
HAZARDOUS CHEMICAL INVENTORY FORM (SEMI - ANNUAL)**

This form assists University of Hawaii with proper management of our hazardous material and hazardous waste and to ensure that materials are safely stored and handled. You should provide a complete inventory of all stored hazardous materials. If additional space is needed, you may use an attached sheet using the same format. If at a later date you obtain materials not previously listed, please submit an amended form.

I. PRODUCT NAME	II. CHEMICAL NAME	Primary Hazard Warning	Physical State (solid, liquid or solution)	Container Size	Amount (gal, lb)s	Qty

INSTRUCTOR/PROGRAM COORDINATOR:

_____ **PHONE NO.:** _____ **LOCATION:** _____
(Printed Name)

_____ **Date:** _____
(Signature)

PLEASE SEND THE COMPLETED FORM TO: Director of Administrative Services. The DOAS may be contacted if you have any questions.
ATTACHMENT 3

College _____

**SAMPLE
UNIVERSITY OF HAWAI'I
Community College
HAZARDOUS CHEMICAL INVENTORY FORM (SEMI - ANNUAL)**

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III. PRODUCT NAME	IV. CHEMICAL NAME	Primary Hazard Warning	Physical State (solid, liquid or solution)	Container Size	Amount (gal, lb)s	Qty
Acetic Acid, Glacial		Flammable	Liquid	1 gal	1 gal	5
Enamel Paint	Naphtha ether, mineral spirit	Flammable	Liquid	1 gal	1 gal	10
Carter's Rubber Cement	Naphtha, Hexane, Propyl alcohol	Flammable	Liquid	4 oz	4 oz	48

INSTRUCTOR/PROGRAM COORDINATOR:

Dr. George Bush **PHONE NO.:** x7777 **LOCATION:** Science Bldg, Rm 205
 (Printed Name)

 (Signature) **Date:** _____

PLEASE SEND THE COMPLETED FORM TO: Director of Administrative Services. The DOAS may be contacted if you have any questions.
ATTACHMENT 3

College _____

**UNIVERSITY OF HAWAI'I
Community College
HAZARDOUS WASTE INVENTORY FORM (ANNUAL)**

This form assists Hawaii Community College with proper management of our hazardous waste. If you have any hazardous or non-hazardous waste being stored for disposal, please provide the information requested. If additional space is needed, you may use an attached sheet using the same format. If at a later date you generate wastes not previously listed, please submit an amended form. **EHSO will complete columns 8 and 9, DOT Class and EPA Waste Code.**

Chemical Name/Product (Chemical constituents)	Physical State (solid, liquid or solution)	Amount (gal, lbs)	Container Size	Container Type	Hazard Category	pH)	DOT Class (EHSO only)	EPA Waste Code (EHSO only)

INSTUCTOR/PROGRAM COORDINATOR:

_____ **PHONE NO.:** _____ **LOCATION:** _____
(Printed Name)

_____ **Date:** _____
(Signature)

PLEASE SEND THE COMPLETED FORM TO: Director of Administrative Services. The DOAS may be contacted if you have any questions.

ATTACHMENT 4

College _____

**SAMPLE
UNIVERSITY OF HAWAI'I
Community College
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Chemical Name/Product (Chemical constituents)	Physical State (solid, liquid or solution)	Amount (gal, lbs)	Container Size	Container Type	Hazard Category	pH)	DOT Class (EHSO only)	EPA Waste Code (EHSO only)
Solvent waste—Acetone 5%, methanol 20%, mineral spirits 50%, water 20%	Liquid	55 gal	55 gal	Drum metal	flam	N/A		
Spray paint—mineral spirit	Liquid under pressure	8 oz	16 oz	Metal	Flam	N/A		
Acid solution—hydrochloric acid 45%, sulfuric acid	Liquid	4 liter	4 liter	Glass	corr	1		

INSTUCTOR/PROGRAM COORDINATOR:

Dr. George Bush PHONE NO.: x7555 LOCATION: Science bldg rm 205
(Printed Name)

(Signature) Date: _____

PLEASE SEND THE COMPLETED FORM TO: Director of Administrative Services. The DOAS may be contacted if you have any questions.

ATTACHMENT 4

Procedure for Making Hazardous Waste Determinations

All wastes must be screened to determine whether they are hazardous. A hazardous waste is one which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The EPA has determined that the following meet the definition of a hazardous waste:

- a) A waste which is listed as hazardous in the regulations (40 CFR 261);*
- b) A mixture that includes a listed hazardous waste; or
- c) A waste which exhibits any of the four following characteristics; ignitability, corrosivity, reactivity, or toxicity.

*Note: The complete text of the hazardous waste regulations is available online at www.epa.gov/epahome/cfr40.htm.

The following procedures must be used to determine if a waste is hazardous. If it is, the procedures will identify the appropriate EPA hazardous waste number for each waste, which will in turn determine disposal requirements:

- (i.) Determine the proper name of the waste and its specific source.
- (ii.) Check the EPA's hazardous waste lists in the following order:
 - (a.) "U" list of toxic wastes (40 CFR 261.33f).
 - (b.) "P" List of acutely hazardous waste (40 CFR 261.33e). See Attachment 6.
 - (c.) "K" List of hazardous wastes from specific sources (40 CFR 261.32).
 - (d.) "F" List (40 CFR 261.31) for a non-specific source of waste.
- (iii.) If the waste is not one the "U" List, the "P" List, the "K" List or the "F" List, you must determine whether the waste exhibits any of following four characteristics:

ATTACHMENT 5

- (a.) Ignitability. A waste that exhibits the characteristic of ignitability has the EPA hazardous waste number of D001. See 40 CFR §261.20.
- (b.) Corrosivity. A waste that exhibits the characteristic of corrosivity has the EPA hazardous waste number of D002. See 40 CFR §261.22.
- (c.) Reactivity. A waste that exhibits the characteristic of reactivity has the EPA hazardous waste number of D003. See 40 CFR §261.23.
- (d.) Toxicity. A waste that exhibits the characteristic of reactivity will have and the EPA hazardous waste number of D004 through D043. See 40 CFR §261.24.

LIST OF ACUTELY HAZARDOUS WASTE (P-CODED WASTE)

The following materials are hazardous wastes if and when they are intended to be discarded (40 CFR 261.33):

1. Any commercial chemical products, or manufacturing chemical intermediate having the generic name listed below.
2. Any specification commercial chemical or product or chemical intermediate having the generic name listed below.
3. Any residue remaining in a container that is not empty. P-coded containers must have their contents removed and be triple rinsed with an appropriate solvent before they are legally empty and no longer regulated.
4. Any residue resulting from the clean-up of a spill of a P-coded waste.
5. The phrase "commercial chemical product or manufacturing chemical intermediate having a generic name listed below" refers to a chemical substances which is manufactured or formulated for commercial or manufacturing use which consists of the commercially pure grade of the chemical, any technical grades of the chemical that are produced or marketed, and all formulations in which the chemical is the sole active ingredient.

Hazardous Waste No.	Chemical Abstracts No.	Chemical Name
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
P007	2763-96-4	5-(Aminomethyl)-3-isoxazolol
P008	504-24-5	4-Aminopyridine
P009	131-74-8	Ammonium Picrate
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	696-28-8	Arsenous dichloride, phenyl-
P054	151-56-4	Aziridine
P067	75-55-8	Aziridine, 2-methyl-
P013	542-62-1	Barium cyanide
P024	106-47-8	Benzenamine, 4-chloro-
P077	100-01-6	Benzenamine, 4-nitro
P028	100-44-7	Benzene (chloromethyl)-
P042	51-43-4	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-
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	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	7740-47-7	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
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-[(diethylamino)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 (202CuCN)
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 (CNCl)
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-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	72-20-8	2,7:3,6-Dimethanonaphth[2,3,-b] oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1alpha,2beta,2abeta,3alpha,6alpha,6abeta,7beta,7alpha)-, & metabolites
P044	60-51-5	Dimethoate
P046	122-09-8	alpha,alpha-Dimethylphenethylamine
P191	644-64-4	Dimetilan
P047	534-52-1	4,6,Dinitro-o-cresol, & salts
P048	51-28-5	2,4,-Dinitrophenol
P020	88-85-7	Dinoseb
P085	152-16-9	Diphosphoramidate, octamethyl-
P111	107-49-3	Diphosphoric acid, tetraethyl ester
P039	298-0404	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, & metabolites
P042	51-43-4	Epinephrine
P031	460-19-5	Ethanedinitrile
P194	23135-22-0	Ethanimidothioc acid, 2-(dimethylamino)-N- {[(methylamino) carbonyl] oxy}-2-oxo-, methyl ester
P066	16752-77-5	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, mercuric salt
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
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-
P118	75-70-7	Methanethiol, trichloro-
P198	23422-53-9	Methanimidamide, N,N-diemthyl-N'- {3-[[[(methylamino) carbonyl]oxy]-phenyl]}-, monohydrochloride
P197	17702-57-7	Methanimidamide, N,N-dimethyl-N'- {2-methyl-4-[[[(methylamino) carbonyl]oxy]phenyl]}-
P050	115-29-7	6,9,-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10- hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide
P059	76-44-8	4,7,-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro- 3a,4,7,7a-tetrahydro-

P199	2032-65-7	Methiocarb
P066	16752-77-5	Methomyl
P068	60-34-4	Methyl hydrazine
P064	624-83-9	Methyl isocyanate
P069	75-86-5	2-Methylactonitrile
P071	298-00-0	Methyl parathion
P190	1129-41-5	Metolcarb
P128	315-08-4	Mexacarbate
P072	86-88-4	alpha-Naphthylthiourea
P073	13463-39-3	Nickel carbonyl (NiCO)
P074	557-19-7	Nickel cyanide (NiCN)
P075	54-11-5	Nicotine & salts
P076	10102-43-9	Nitric oxide
P077	100-01-6	p-Nitroaniline
P078	10102-44-0	Nitrogen dioxide
P076	10102-43-9	Nitrogen oxide (NO)
P078	10102-44-0	Nitrogen oxide (NO ₂)
P081	55-63-0	Nitroglycerine
P082	62-75-9	N-Nitrosodimethylamine
P084	4549-40-0	N-Nitrosomethylvinylamine
P085	152-16-9	Octamethylpyrophosphoramidate
P087	20816-12-0	Osmium Tetroxide (OsO ₄)
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	534-52-1	Phenol, 2-methyl-4,6-dinitro- & salts
P020	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-
P009	131-74-8	Phenol, 2,4,6-trinitro-, ammonium salt
P128	315-18-4	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)
P199	2032-65-7	Phenol, (3,5-dimethyl-4-(methylthio)-), methylcarbamate
P202	64-00-6	Phenol, 3-(1-methylethyl)-, methylcarbamate
P201	2631-37-0	Phenol, 3-methyl-5-(1-methylethyl)-, methylcarbamate
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 (KCN)
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	75-86-5	Propanenitrile, 2-hydroxy-2-methyl-
P081	55-63-0	1,2,3,-Propanetriol, trinitrate
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	54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-, & salts
P204	57-47-6	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester, (3aS-cis)-
P114	12039-52-0	Selenious acid, dithallium (thallous) salt
P103	630-10-4	Selenourea
P104	506-64-9	Silver cyanide (AgCN)
P105	26628-22-8	Sodium azide
P106	143-33-9	Sodium cyanide (NaCN)
P108	57-24-9	Strychnidin-10-one, & salts
P018	357-57-3	Strychnidin-10-one, 2,3-dimethoxy-
P108	57-24-5	Strychnine & salts
P115	7446-18-6	Sulfuric acid, dithallium (thallous) salt

P109	3689-24-5	Tetraethyldithiopyrophosphate
P110	78-00-2	Tetraethyl lead
P111	107-49-3	Tetraethyl pyrophosphate
P112	509-14-8	Tetranitromethane
P062	757-58-4	Tetraphosphoric acid, hexaethyl ester
P113	1314-32-5	Thallic oxide
P113	1314-32-5	Thallium oxide (Tl ₂ O ₃)
P114	12039-52-0	Thallium (I) selenite (thallous selenite)
P115	7446-18-6	Thallium (I) sulfate (thallous sulfate)
P109	3689-24-5	Thiodiphosphoric acid, tetraethyl ester
P045	39196-18-4	Thiofanox
P049	541-53-7	Thioimidodicarbonic diamide (H ₂ NCS) ₂ NH
P014	108-98-5	Thiophenol
P116	79-19-6	Thiosemicarbazide
P026	5344-82-1	Thiourea, (2-chlorophenyl)-
P072	86-88-4	Thiourea, 1-naphthalenyl-
P093	103-85-5	Thiourea, phenyl-
P185	26419-73-8	Tirpate
P123	8001-35-2	Toxaphene
P118	75-70-7	Trichloromethanethiol
P119	7803-55-6	Vanadic acid, ammonium salt
P120	1314-62-1	Vanadium Oxide (V ₂ O ₅) vanadium pentoxide
P084	4549-40-0	Vinylamine, N-methyl-N-nitroso-
P001	81-81-2	Warfarin, & salts, when present at concentrations greater than 0.3%
P205	137-30-4	Zinc, bis(dimethylcarbamodithioato-S,S')-
P121	557-21-1	Zinc cyanide [Zn (CN) ₂]
P122	1314-84-7	Zinc phosphide (Zn ₃ P ₂) when in concentrations greater than 10%
P205	137-30-4	Ziram

Instructions for Completing the Chemical Waste Tag (cont')

All waste containers must be tagged

Hazard Class: Is this waste EPA regulated hazardous waste or is it not EPA regulated hazardous waste. Call UHCC ESS for assistance.

EPA regulated hazard codes. Please mark accordingly for your waste stream. If any of these items are in your waste stream or exhibit these characteristics, please mark the appropriate item.


Hawaii Community College
 120 W. Kawili Street, Hilo, Hawaii 96720
 (808) 974-7656

Hazard Class	__ RCRA	__ NonRCRA
__ Flammable D001	__ Oxidizer D001	__ Corrosive D002
__ Reactive D003	__ Toxic:....	
__ Arsenic.D004	__ Hexachlorobenzene.D032	
__ Barium D005	__ Hexachlorobutadiene.D033	
__ Benzene.D018	__ Hexachloroethane.D034	
__ Cadmium.D006	__ Lead.D008	
__ Carbon Tetrachloride.D019	__ Lindane.D013	
__ Chlordane.D020	__ Mercury.D009	
__ Chlorobenzene.D021	__ Methoxychlor.D014	
__ Chloroform.D022	__ Methyl ethyl ketone.D035	
__ Chromium.D007	__ Nitrobenzene.D036	
__ o-Cresol.D023	__ Pentrachlorophenol.D037	
__ n-Cresol.D024	__ Pyridine.D038	
__ p-Cresol.D025	__ Selenium.D010	
__ Cresol.D026	__ Silver.D011	
__ 2,4-D.D016	__ Tetrachloroethylene.D039	
__ 1,4-Dichlorobenzene.D027	__ Toxaphene.D015	
__ 1,2-Dichloroethane.D028	__ Trichloroethylene.D040	
__ 1,1-Dichloroethylene.D029	__ 2,4,5-Trichlorophenol.D041	
__ 2,4-Dinitrotoluene.D030	__ 2,4,6-Trichlorophenol.D042	
__ Endrin.D012	__ 2,4,5-TP (Silvex).D017	
__ Heptachlor.D031	__ Vinyl Chloride.D043	

All waste containers must be segregated by hazard class.