

**University of Alaska Fairbanks
Safety System Policy and Procedure**

Document Number: **601**

Revision Date: **February 2003**

Subject: **Non-Radioactive Hazardous Materials Management**

Purpose: To outline responsibilities, establish procedures, guidelines and proper practices for handling, storing, redistribution, and/or disposing of surplus hazardous materials and hazardous waste.

Objective: To prevent and control accidents and loss to the University of Alaska Fairbanks, its employees, students, and the public.

To reduce the risk associated with handling, storing, transporting, utilizing, and disposing of hazardous materials and hazardous waste. To assure compliance with all applicable laws concerning hazardous materials, including, but not limited to, 40 CFR 260-271.

Scope: Applies to all University of Alaska Fairbanks (UAF) employees and students who may store, distribute, transport or utilize hazardous materials as a part of their employment.

Table of Contents

I.	Responsibilities	Page 2
	A. Senior Management	
	B. Deans and Directors	
	C. Hazardous Materials Users	
	D. Environmental Health & Safety and Risk Management (EHS&RM)	
II.	Procedures	Page 6
	A. Storage of Hazardous Materials	Page 6
	a. Storage Color-Coding for Compatibility	
	b. Uniform Fire/Building Code Information	
	c. Material Safety Data Sheet Information	
	B. Transportation of Hazardous Materials	Page 8
	a. Brief Overview of 49 CFR (DOT) Transportation Regulations	

- b. Brief Overview of IATA (Air Transport Dangerous Goods Regulations)
- c. Commercial Drivers Licenses (CDL) Requirements

C. Disposal of Hazardous Materials/Waste **Page 9**

- a. UAF Hazardous Materials Transfer Request Form Information
- b. Hazardous Materials Management at UAF's 90-Day Storage Facility
- c. Hazardous Waste Information
- d. Bio-Hazardous Materials
- e. Used Oils
- f. Used Batteries
- g. Empty Containers
- h. Fluorescent Lamps

D. Waste Minimization **Page 15**

- a. Surplus Chemicals Information
- b. Micro Scale Equipment
- c. Distillation

E. Hazardous Materials/Wastes from (CESQG) **Page 16**

- a. CESQG – Conditionally Exempt Small Quantity Generators

III. Chemical Hygiene Plan Requirements **Page 19**

IV. Chemical Spills **Page 20**

V. Radioactive Waste Management **Page 20**

VI. Related Subjects **Page 20**

VII. Attachments **Page 21**

Section I: RESPONSIBILITIES

I.A. Senior Management – Chancellor and Vice Chancellors

1. Senior Management is responsible for ensuring that all employees who may come into contact with hazardous materials as a part of their employment are:
 - a. Provided necessary tools, equipment, training, and information concerning safe work practices;
 - b. In compliance with safety policies, procedures, and regulation pertaining to hazardous materials and hazardous waste management.

2. To the greatest degree possible, Senior Management is responsible for assuring that each employee has a safe and healthy work place.

B. Deans-Directors and Department Heads are responsible for:

1. Assuring that the Hazardous Material Management Program is implemented and properly administered within all departments producing or handling surplus hazardous materials and waste; and that all regulatory requirements are complied with.
2. Assuring that appropriate temporary hazardous material collection areas are identified and approved for use by all departments producing hazardous waste, or maintaining surplus hazardous materials.
3. Designating a person(s) within each department (or group of departments) who is responsible for identifying proposed hazardous material collection areas, coordinating material collection, and overseeing of such collection.
4. Each department is required to maintain an up-to-date chemical inventory including the location housed (building, room number, etc.) On at least an annual basis, departments are requested to provide EHS&RM, Hazmat Section, an up-to-date inventory of hazardous materials on hand. This information is entered into a campus-wide chemical inventory.

C. Hazardous Material Users and Producers of Hazardous Waste

Surplus hazardous materials must be removed from work areas (laboratories, classrooms, shops, etc.) and properly stored at all times pending redistribution or other disposition. In compliance with local, State, and Federal requirements, materials deemed to be hazardous waste must be shipped off-site promptly. Redistribution of surplus hazardous materials and off-site disposal of UAF-wide hazardous waste is conducted on a quarterly basis or as otherwise required by law.

To help facilitate compliance with these requirements, surplus hazardous materials, and hazardous waste should be properly identified, containerized and promptly moved to approved and designated hazardous material accumulation and collection areas.

1. Hazardous material users and waste producers are responsible for proper use of hazardous substances, handling, storage, and disposal.
2. Hazardous material users and waste producers are responsible for identifying and designating.
 - a. Surplus hazardous materials that are no longer needed by them, but could possibly be used by others.

- b. Hazardous material where there is no apparent future use.
- c. Quantities of hazardous materials that exceed the allowable Limits for safe storage, i.e., Uniform Fire and Building Codes.

Surplus hazardous materials and hazardous waste should be properly containerized and prepared for storage in the approved designated hazardous material collection areas (fume hoods, appropriate storage cabinets, bunkers, or other areas inspected and approved by Environmental Health & Safety and Risk Management department.)

Hazardous material must be properly containerized in its original container, DOT specified containers, or other containers identified for hazardous material type, as designed by EHS&RM Hazmat Section Coordinator.

D. EHS&RM - Hazmat Section Responsibilities

1. Determine whether all materials submitted for removal are:
 - a. a recyclable material
 - b. a useable surplus material
 - c. a RCRA hazardous waste
 - d. a non-RCRA hazardous waste
 - e. a non-hazardous waste
 - f. a TSCA waste
2. Helps identify hazardous material accumulation sites with UAF Safety Services. Assigns site number to all approved accumulation and collection sites.
3. Maintains waste accumulation facility in accordance with regulatory and established safety practices. Documents and performs weekly inspection of assigned sites.
4. Assists hazardous material users and waste producers if selecting:
 - a. Proper hazardous material collection areas and required containers; and
 - b. Proper hazardous material labeling and record keeping
5. Assists as necessary in spills/hazardous material emergencies if requested by UAF Safety Services.
6. Reviews and approves accumulation of materials in containers larger than 26 gallons, or containers which are not DOT specification containers for hazardous material type.
7. Assures timely disposal of hazardous waste generated at UAF. Arranges for the transportation, treatment and disposal identified hazardous waste on a quarterly basis.

8. Coordinates and/or arranges for sampling, testing and disposal of new waste streams and/or potential hazardous materials and waste.
9. Coordinates off-site shipment of hazardous wastes using licensed transporters and certified transportation vehicles.
10. Reviews and/or inspects the facilities of recommended suppliers of transportation, testing, and disposal/recycling services prior to first use of such facilities; and reviews/re-inspects as needed, or on a periodic basis.
11. Completes and maintains copies of hazardous material manifests, biennial and other reports as required by law.
12. Oversees Chemical Surplus Program.
13. The Safety Officer/ Hazardous Materials Coordinator/Waste Handlers must receive proper training and utilize personnel protective clothing and equipment as required by Material Safety Data Sheets, container labels, or as required by the UAF Safety Services, or as mandated by law.
14. Participates in required training programs involving hazardous waste handling, management, hazard communication, etc.

E. UAF Safety Services and EHS&RM, Hazmat Section:

1. Provides advice and assistance to UAF Staffing involving all aspects of the Hazardous Materials Management Program.
2. Oversees the implementation and administration of this program and makes changes as necessary due to:
3.
 - a. Regulatory change recommendation from
 - b. Users quality assurance audits
4. Identifies, develops, provides, assists, and/or arranges for required training programs for UAF hazardous material users, waste producers, handlers, etc.
5. Conducts periodic audits and surveys of accumulation and collection sites and the Hazardous Material Management Program operations to assure continued compliance.
6. Participates in audits and inspections conducted by regulatory agencies, OSHA, EPA, ADEC, etc.

7. Receives proper training and utilizes personnel protective clothing and equipment as required (i.e. indicated on Material Safety Data Sheets, container labels, or mandated by law for type hazard presented.)
8. Participates in required training programs identified for hazardous material management, handling, etc.

Section II: PROCEDURES

II.1.a Storage of Hazardous Materials

Labeling and Storage Color-Coding

1. Procedures for hazardous material labeling (marking and color coding) apply to all UAF employees who work with hazardous materials.
2. Labeling: To help ensure the correct storage compatibilities of laboratory chemicals and other hazardous materials, efficient hazardous material management and safety operations. Hazardous materials in use, stored for future use, or disposal must be labeled in accordance with local, State and Federal law.

The UAF labeling policy requires that:

- a. every hazardous chemical or component in a container must be identified;
 - b. display appropriate hazard warnings; and
 - c. when known, include the name and address of the manufacturer, importer, or responsible party.
3. The hazard warning system that has been adopted by the University of Alaska is the NFPA 704M (National Fire Protection Association) hazard marking and color coding system (University of Alaska Regulations 05.09.01(J)(1)(c).

The NFPA 704M colored diamond system is designed to communicate health (toxicity), fire (flammability), and reactivity (stability) information to individuals working with hazardous materials.

The NFPA numerical ratings 0-4 represent the degree of hazard. An “0” represents a low, or no-hazard rating, condition. A “4” represents an extreme hazard.

In the colored diamond, blue, represents health, red for flammability, yellow for reactivity, and white “Special Information” which is often followed with hazard symbols.

The J.T. Baker Company system may be used in cases where the NFPA rating system does not adequately apply or describe chemical hazards, or a NFPA 704M numerical rating has not been assigned.

NOTE: Hazardous waste that has been prepared for transport must be labeled in accordance with Federal DOT regulations as found in 49 CFR.

Color coding identifies the nature of hazard and the required storage locale. The color code system assures proper storage of hazardous materials based on compatibility, the required storage locale and atmosphere.

Chemical compatibility and storage is assigned by grouping chemicals marked with either the same color of marking tape or the same color label (in the case of chemicals manufactured by J.T. Baker.)

As an example, containers with “blue” labels should be stored with other “blue” labeled containers in a secure area for poisons of toxics.

The color code system used by UAF is shown below.

BLUE	Health Hazard. Store in a secure poison area.
RED	Flammable hazard. Store in a flammable liquid storage area. (Approved flammable storage cabinets.)
YELLOW	Reactivity hazard. Store separately and away from flammable or combustible materials.
WHITE	Contact hazard. Store in a corrosion proof area. Note: Acids and bases should be stored separately.
ORANGE	Substances with no rating higher than two in any hazard category. Store in a general chemical storage area.
STRIPED	Incompatible materials of the same color class have striped labels. Proper storage must be individually assessed.

4. The Baker Saf-T-Data Guide (J.T. Baker Chemical Company) numerical and color coding system is similar to the NFPA labeling system. However, the Baker system, which is designed for laboratory situations, includes some variations and additions in its system and may not always correspond with NFPA 704M.
5. When labeling and marking containers, only labeling systems approved and authorized by the Safety Officer/Hazardous Material Coordinator may be used for container labeling purposes.

Various hazardous material labeling systems are in use throughout the nation. As with the Baker Company, many manufacturers and industrial organizations have introduced hazardous material labeling systems. As an example, the National

Paint and Coatings Association developed a labeling system, which is now well used and is similar to the NFPA labels, but provides information specific to painting and coating materials. This system and other provide additional information that is useful in managing occupational health and environmental risk exposures.

6. Containers which are to be shipped (i.e.; to or from a field camp or other off-site location) must be labeled with the Department of Transportation (DOT) labeling system (49 CFR) on the outside of the container and be accompanied by a hazardous material shipping manifest or other appropriate bill of lading. Please see the Safety Officer/Hazardous Material Coordinator for information and assistance.

II.2.a Uniform Fire and Building Code Information

The storage of hazardous materials, as regulated by the Uniform Fire Code and Building Codes, is primarily based upon the type of hazardous material, the quantity of the material and the occupancy designation of the facility.

Facilities must be managed so as to prevent the storage of hazardous materials in excess of these regulations, (Policy 1206.)

II.3.a Material Safety Data Sheets (MSDS)

The MSDS provides detailed information such as:

- Material Identification
- Hazardous Ingredients/Identity Physical/Chemical
- Characteristics
- Fire and Explosive Hazard Data
- Reactivity Data
- Health Hazard Data
- Precautions for Safe Handling
- Control Measures

Contact EHS&RM, Hazmat Section for assistance in obtaining Material Safety Data Sheets.

SPECIAL NOTE: Hazardous material users are responsible for making sure proper labels and hazard warnings are marked on all purchases shipped directly from the vendor to the Department. Safety and hazard information, MSDS, and such should be sent to the Unit Safety Coordinator or other department staff assigned to maintain hazardous material information.

II.B Transportation of Hazardous Materials

1. 49 CFR Transportation Regulations (UAF Policy 902)

Regulations governing the transportation of hazardous materials by commercial vehicle are found in 49 CFR 171-178. All persons who package, handle, offer for transport, transport or receive hazardous materials shipments must attend and complete the Hazardous Materials Transportation training sessions. The DOT Hazardous Materials Table, Special Provisions, Hazardous Material Communication Requirements and Emergency Response Information requirements are located in 49 CFR Part 172.

General requirements for shipments and packaging are found in 40 CFR Part 173.

All shipments must be properly packaged and documented. Please refer to 49 CFR, or contact EHS&RM, Hazmat Section for assistance.

Call Safety Services regarding the use of UAF's 24-hour emergency phone number for hazmat shipments.

2. IATA/ICAO Air Transport Regulations

Additional shipping information for air transportation is available from the Dangerous Good regulations.

This reference material includes such information as is necessary to properly package and identify materials for air transport (documentation on Shipper's Declaration for Dangerous Goods manifests.)

It also contains specific information regarding air carrier limitations (identifies items they will not accept for shipment.)

Copies are available from the International Air Transport Association, 2000 Peel Street, Montreal, Quebec, Canada H3A 2R4.

Please refer to the Dangerous Goods regulations or contact EHS&RM, Hazmat Section for more information.

3. Commercial Drivers Licenses Requirements (CDL)

Commercial drivers licenses with hazardous materials endorsements are required for transporting placarded amounts of certain materials.

Contact EHS&RM, Hazmat Section for more information.

II.C.1 Disposal of Hazardous Materials/Waste

1. To communicate the need for the removal of hazardous materials or other chemicals, utilize the **UAF Hazardous Materials Transfer Request Forms**, which are available upon request from the EHS&RM, Hazmat Section.
2. Complete the generator designated portion of the UAF “Non-Radioactive Hazardous Material Transfer Request Form.”

Fill out and affix required hazardous material label on containers and promptly place in approved hazardous material collection areas.

At this time when the accumulation of a material begins, the date should be clearly marked and visible for inspection (mark “satellite accumulation start date” on transfer label.)

Send the white and yellow copies of the three-part UAF Hazardous Material Transfer Request Form to the EHS&RM, Hazmat Section.

Retain the pink copy of request form for department records.

1. Upon receipt of the UAF Hazardous Material Transfer Request Form, the EHS&RM, Hazmat Section will arrange for pick-up and transfer of all the materials listed on the form to an approved hazardous material accumulation site. The hazardous materials are removed from collection areas by EHS&RM, Hazmat Section personnel.

General rules for proper management of surplus hazardous materials and wastes include but are not limited to the following:

1. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.
2. Assure the hazardous materials located in collection areas are stored in a safe manner, i.e.; with regard to chemical compatibility, including spill containment provisions if needed.
3. Users and producers should survey hazardous material collection areas on a weekly basis, or other department staff designated by a Dean or Director, (i.e.; Unit Safety Coordinator, Supervisors, etc.)
4. Label and identify the contents of all containers.
5. Accumulation of materials in containers larger than 26 gallons, or containers which are not DOT specification containers for hazardous material type must be approved by the Safety Officer/Hazardous Material Coordinator, prior to use.

6. To maintain satellite accumulation area status, no more than one quart of acutely hazardous (P-listed) waste or 55 gallons of hazardous waste may be collected in a laboratory, prior to removal. (For the list of acutely hazardous wastes, please refer to Section 3, EPA Hazardous Waste Codes, located in the UAF Hazardous Materials Management Information binder.) If a laboratory accumulates in excess of 500 ml of acutely hazardous waste, laboratory personnel must contact EHS&RM immediately to request the removal of the acutely hazardous waste.
7. If accumulating ignitable materials, care must be taken to store the material in accordance with applicable fire safety codes and procedures.
8. Before placing hazardous materials in collection area, check containers thoroughly to assure that no leaks are present.

Any leaks or spills must be promptly reported to the UAF Fire Department (phone 911 or 7721.) The Fire Department is responsible for notifying the Safety Officer/Hazardous Material Coordinator (all such instances), or Hazardous Material Response Team as deemed necessary.

9. Attach information to the container to identify any special known or suspect hazard information.
10. Hazardous materials should never be simply abandoned at hazardous material collection areas or accumulation sites.
11. All procedures must be strictly followed to assure efficient management and cost effectiveness of the Hazardous Material Management Program (proper labeling and identification of surplus hazardous materials and suspected hazardous waste, containerizing, completing of Hazardous Material Transfer Request Forms, etc.)
12. Depending on the chemical hazard presented, hazardous material users and producers must receive proper training and utilize personnel protective clothing and equipment as required (i.e.; indicated on Material Safety Data Sheets, container labels, or as otherwise mandated by law.)

II.C.2 Hazardous Materials Management at UAF's 90-Day Storage Facility

II.C.2.a Chemical check-in procedures

1. All materials must be documented on Hazardous Materials Transfer Request Forms.

2. Perform a regulatory and safety information review for the materials identified on the transfer forms. This is accomplished by accessing by accessing information available from, but not limited to, the following sources:
 - a. 40 CFR Parts 260-299
 - b. 49 CFR Parts 100-177
 - c. Sigma-Aldrich Library of Regulatory & Safety Data Sigma-
 - d. Sigma-Aldrich Library of Chemical Safety Data
 - e. Bretherick's Handbook of Reactive Chemical Hazards
 - f. Merck Index
 - g. CRC Handbook of Laboratory Safety
 - h. Farm Chemicals Handbook
 - i. J.T. Baker Safety Storage Information
 - j. Material Safety Data Sheets
3. List pertinent information on the Hazardous Materials Transfer Request Form.
4. Ensure that all applicable labels, warnings and the words "Hazardous Waste" when applicable are marked on the chemical containers.
5. Ensure that the Hazardous Materials Facility accumulation start date information is marked on all chemical containers.
6. Document temporary storage location, i.e.; cabinet number, shelf number or containment cell. Storage location is based upon DOT Hazard Class and chemical compatibility. Materials are segregated and stored in the following areas:

Cab/Cell Number	Description	DOT Hazard Class
Cab #1	Liquids for Hazcat/analysis	
Cab #2	Solids for Hazcat/analysis	
Cab #3	Non-RCRA Regulated Liquids	
Cab #4	Non-RCRA Regulated Liquids	
Cab #5	Flammable Solids	Hazard Class 4
Cab #6	Flammable Solids	Hazard Class 3
Cab #7	Poison Solids	Hazard Class 6
Cab #8	Poison Liquids	Hazard Class 6
Cab #9	Class 9 Materials	Hazard Class 9
Cab #10	Oxidizers	Hazard Class 5
Cab #11	Corrosive Acids	Hazard Class 8
Cab #12	Non-hazardous materials	
Cab #13	Non-hazardous materials	
Cab #14	Non-hazardous materials	
Cab #15	Non-hazardous materials	
Cab #16	Non-hazardous materials	
Cab #17	Non-hazardous materials	
Cab #18	Non-hazardous materials	

Cab #19	Non-hazardous materials	
Cab #20	Non-hazardous materials	
Cab #21	Stains, Dyes & Indicators	
Cab #22	Stains, Dyes & Indicators	
Cab #23	Stains, Dyes & Indicators	
Cell A	Flammable Liquids	
Cell B	Corrosive Acids	Hazard Class 8
Cell C	Corrosive Bases	Hazard Class 8
Cell D	Flammable Liquids	Hazard Class 3
Cell E	Flammable Liquids	Hazard Class 3
Cell F	In-Stock Diesel Fuel	Hazard Class 3
Cell G	PCB Related Materials	Hazard Class 9
Cell H	Used Oil; Glycols	Hazard Class 3
Cell I	In-Stock Materials, i.e.; Mineral Oil, Motor Oil	Hazard Class 3

II.C.2.b General Safety Provisions

1. Wear safety glasses or goggles at all times. Utilize other personal protective equipment as needed.
2. Upon entering facility, unlock rear gates of covered storage area.
3. Whenever leaving the facility, ensure all doors and gates are properly secured and the water supply to hose/sink is shut-off.

II.C.3 Disposal of Hazardous Waste

Criteria for listing hazardous in 40 CFR 261.11.

Characteristics of hazardous waste is found in 40 CFR 261.20 and includes but is not limited to the following:

II.C.3.a Characteristic Wastes:

1. **D001** are **ignitable** wastes having a flash point of <140° F. Oxidizers are defined in 49 CFR 173.151, are also listed as D001 hazardous wastes.
2. **D002** are **corrosive** wastes, having a pH of less than or equal to 2 or greater than or equal to 12.5.
3. **D003** have **reactive** characteristics as defined in CFR 261.23.
4. **D004-D042** wastes contain contaminants in excess of Toxic Characteristic Leachate Procedure (TLCP) maximum concentration limits as defined in 40 CFR 261.24.

II.C.3.b Listed Waste:

1. F-listed wastes are listed wastes from non-specific sources such as F001 (bottom halogenated solvents used in degreasing.)
2. K-listed wastes are listed wastes from specific sources such as K001, (bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.)
3. U-listed wastes are discarded commercial chemical products, manufacturing chemical intermediates, off-specification species, container residues and spill residues. U-listed wastes include materials such as U001, acetaldehyde. U-listed wastes are “toxic” wastes and typically have lethal dose 50% (LD50) of between 50-500 mg/kg oral rat.
4. P-listed wastes are also discarded commercial chemical products, manufacturing chemical intermediates, off-specification species, container residues and spill residues. P-listed wastes include materials such as P105, sodium azide. P-listed wastes are “acute hazardous wastes” and typically have lethal dose 50% (LD50) of between <50 mg/kg oral rat.

If the material meets any of the criteria for hazardous waste, then the words “Hazardous Waste” must be clearly marked on the container. This is in addition to the name or description of what the vessel contains.

1. The EHS&RM, Hazmat Section shall coordinate and/or arrange for appropriate sampling, testing, and analysis of hazardous waste when the waste is not readily identifiable, or when waste stream has been changed significantly.
2. When analytical results generated in the testing process are received, the EHS&RM, Hazmat Section shall determine the proper disposal method for the waste. Disposal of waste determined to be “non-hazardous” must still take into consideration the restrictions established by Golden Heart Utilities and the Fairbanks North Star Borough Sanitary Landfill.
3. The EHS&RM, Hazmat Section shall coordinate the off-site shipment of containers containing hazardous waste. Only approved and properly licensed transporters and TSD facilities may be used for UAF hazardous waste disposal.

II.C.4 Bio-Hazardous Materials

Please see the UAF Bloodborne Pathogen Policy and Procedure or contact Safety Services or the EHS&RM, Hazmat Section for more information.

II.C.5 Used Oils

Used oils should be:

1. Collected in clean containers in good condition.
2. Mark all containers including collection and transfer containers with the words “Used Oil.”
3. Containers should remain closed at all times other than when adding or removing used oil.
4. Solvents, parts washer fluids, carburetor cleaners glycols should never be added to the used oil container.

The EHS&RM, Hazmat Section submits samples of used oils for energy recovery parameter analyses which includes EPA Methods:

EPA 6010: arsenic, cadmium, chromium and lead content flashpoint
EPA 1010: total halogens
ASTM D808: polychlorinated biphenyls
EPA 808:

EPA Used Oil Management Standards are found in 40 CFR Part 279
Call the EHS&RM, Hazmat Section if more information is needed.

II.C.6 Used Batteries

Call the EHS&RM, Hazmat Section for removal and proper disposal of batteries.
Collection containers are provided at UAF Facility Services for the proper disposal of:

Alkaline batteries (all sizes)
Ni-Cad batteries
Lithium batteries
Lead-Acid (emergency lighting style batteries)

Ensure that all batteries are completely discharged before segregation in the appropriate container.

Call EHS&RM, Hazmat Section for the disposal of mercury batteries or for additional information.

II.C.7 Empty Containers

Empty containers should be clean and marked with the work “Empty” or the initials M/T.

Containers which held P-listed (acutely hazardous) listed materials should be given to the EHS&RM, Hazmat Section for disposal.

Pesticide containers should be triple rinsed (with the rinsate added as a part of the application solution.) The container should be punctured and marked accordingly.

Broken glass should be properly packaged in puncture proof containers, i.e.; poly-lined fiberboard boxes, and marked to identify contents.

II.C.8 Fluorescent Lamps

Fluorescent, high pressure sodium, neon, high intensity discharge, mercury vapor and metal halide lamps which contain mercury are regulated as Universal Waste. Please contact the EHS&RM, Hazmat Section for the disposal/recycling of these types of lamps.

II.D Waste Minimization

1. Surplus Chemicals

The Surplus Chemical Program is part of the UAF Hazardous Material Minimization Program.

It provides a method for tracking and redistribution of surplus chemicals. A listing of available materials will be periodically distributed to Department Unit Safety Coordinators who should communicate/circulate the listing to all potential users. These materials are available at no charge to the department.

The UAF Surplus Chemical Program includes chemicals that are in excess or chemicals that are no longer needed by the original user/purchaser but may be useful elsewhere. By participating in the chemical exchange program within UAF, we can further utilize existing resources, create a safer environment, and effectively reduce waste disposal costs. Redistribution of chemicals between various departments may be accomplished by the following means:

- a. Completion of Hazardous Material Transfer Form advising that surplus or excess chemicals are available for possible redistribution. Please include information pertaining to the material such as: seal intact/broken, grade, concentration, approximate age of the material.
- b. Completed forms should be sent to the EHS&RM, Hazmat Section. The hazmat section will compile a list of available chemicals and facilitate the redistribution of materials upon request. List of available chemicals is distributed on a periodic basis or upon user request.

2. Micro Scale Equipment

Micro scale laboratory equipment may be suitable for some application, thus reducing the amount of materials used in initial reactions/synthesis and subsequent waste streams.

Please call the EHS&RM, Hazmat Section for more information.

3. Distribution

Solvent recycling is a good method of reducing overhead and waste disposal costs. Ensure containers are labeled appropriately to identify their content and recycling status.

Please call the EHS&RM, Hazmat Section for more information.

II.E Hazardous Materials/Wastes from Off-Site (CESQG) (Conditionally Exempt Small Quantity Generator) status:

The University of Alaska Fairbanks currently operates the following Conditionally Exempt Small Quantity Generators following facilities which have CESQG status:

Palmer Research Center	EPA ID#AKD 983073966
Poker Flat Research Range	EPA ID#AKO 0000374959
Toolik Field Station	EPA ID#AKR 000000117
Seward Marine Center	EPA ID#AKD 983069766

A generator is a conditionally exempt small quantity generator if he generates no more than 100 kilograms of hazardous waste or 1 kilogram of acutely hazardous waste (p-listed waste) in a calendar month.

Wastes accumulated on-site should never be allowed to exceed 1000 kilograms of hazardous waste or 1 kilogram of acutely hazardous waste.

Conditionally exempt small quantity generators of hazardous waste shall comply with standards set forth in 40 CFR 261.5 "Special requirements for hazardous waste generated by conditionally exempt small quantity generators."

The shipment of hazardous waste will be directed as follows:

Location:
Contact Name:
Direct Shipment To:
Palmer Research
Don Gossett
Disposal Contractor
Poker Flat Research
Kathe Rich
Disposal Contractor
Toolik Field Station
Mike Abels
Disposal Contractor

Seward Marine Center
Tom Smith
Disposal Contractor

Direct shipments to the disposal contractors are coordinated with the assistance of the EHS&RM, Hazmat Section.

1. Procedures:

1. Removal/disposal of all hazardous materials, including non-RCRA regulated substances, will be coordinated with the EHS&RM, Hazmat Section.
2. Requests for removal of hazardous material/wastes will be communicated by utilizing UAF's "Non-Radioactive Hazardous Materials Transfer Request" forms, (see attachment #1)
 - a. The generator will utilize the three-part form (provided by the EHS&RM, Hazmat Section) to communicate the following information:
 - i. Chemical name/description or name and percentage of chemical constituents
 - ii. Approximate quantity of the material
 - iii. The physical state of the material, gas or semi-solid
 - iv. Container type, i.e.; glass, plastic, metal, fibre-board
 - v. On-site temporary storage location
 - vi. Date generated
 - vii. Generator contact name and phone number
 - viii. Material origin, i.e.; research, academic, or support activities
 - b. The generator will send the white and yellow copies of the three-part transfer form to the EHS&RM, Hazmat Section via campus mail or other means. The pink copy of the form should be retained for departmental records.
3. All hazardous materials/wastes must be stored in the appropriate storage containers and segregated with regard to their chemical compatibility.
4. Prior to transport, materials must be properly packaged and labeled in accordance to DOT transportation regulations as found in 49 CFR.
5. All materials transported on public highway must be properly identified on appropriate shipping documents as indicated in 49 CFR subpart C.
6. Drivers of vehicles containing placarded amounts of hazardous materials must have commercial driver's licenses with hazardous materials endorsements.

7. Upon receipt of the transfer form requests for chemical removal/disposal, the EHS&RM, Hazmat Section will review regulatory requirements to establish whether or not the material is a:
 - a. RCRA-regulated waste
 - b. Non-regulated potentially hazardous waste
 - c. Useable surplus material
 - d. Recyclable material
 - e. Hazardous waste that can safely be consolidated with other chemically compatible waste streams to reduce over-all disposal costs, i.e.; consolidated non-flammable halogenated liquids
 - f. Non-hazardous waste
 - g. TSCA-regulated waste

8. Following the regulatory review, the EHS&RM, Hazmat Section will contact the appointed CESQG representative to schedule pick-up of the materials.

9. For direct shipments to the disposal contractor, an inventory of materials for disposal must be compiled and submitted to the EHS&RM, Hazmat Section, three weeks prior to the anticipated pick-up.

2. Record Keeping:

Hazardous Materials Transfer Request form information received from CESQG's will be entered into the EHS&RM, Hazmat Section's chemical inventory database. Information recorded (if pertinent) includes:

Item transfer number	EPA Waste ID number
Date	DOT Hazard Class
Chemical/listing of constituents	DOT Shipping Name
Quantity	UN/NA Number
Number of containers	LD50 Information
Container type	Flash Point
Physical state of material	pH
Department name	Storage Color Code
Building name	UAF transfer location
Room number	Consolidation drum number
Contact name	Waste manifest number
Material origin: academic, research, support	Waste profile number
Chemical abstract service number	Invoice number
Sigma Aldrich reference number	Invoice line item number
Health hazard information	Chemical characteristics
	Chemical incompatibilities

Computer generated reports can be sorted by the criteria listed above.

3. Reports:

EHS&RM, Hazmat Section completes a biennial waste report which is mandated by the EPA. Currently, biennial reporting is not required for CESQG's.

Section III: CHEMICAL HYGIENE PLAN REQUIREMENTS

The Occupational Safety and Health Administration (OSHA) requires written Chemical Hygiene Plans (CHP's) for laboratories that utilize hazardous materials.

This requirement entitles "Occupational Exposures to Hazardous Chemicals in Laboratories" is found in 29 CFR part 1910.

Please see UAF policy 503 "Chemical Hygiene Plan for Small-Scale Laboratories" or call the EHS&RM for more information.

Section IV. CHEMICAL SPILLS

A. Any leaks or spills must be promptly reported to the UAF Fire Department Dispatch Center (911 or 7721). The caller should try to provide a detailed description of the spill, including the name and approximate quantity of the chemical(s) involved.

Advise if the chemical is flammable or whether threat of fire or asphyxiation is imminent. The Fire Department is responsible for notifying the Safety Officer/Hazardous Material Coordinator or Hazardous Material Response Team as deemed necessary.

B. General Rules and Precautions include:

1. Call 911 or 7721, Communicate as much information as possible. Do not put yourself or others at risk to gain additional information if the material or associated hazards are unknown.
2. Notify responsible parties.
3. If the chemical nature of the spill is unknown, treat the spill as you would a highly toxic hazardous material, take all safety precautions and evacuate the area.
4. Consult reference materials, including but not limited to the Material Safety Data Sheets for the item or items spilled. The MSDS will provide information on the potential hazard involved (sections 1 through 6); spill and disposal procedures (section 7); protective equipment and measures (section 8); storage, handling date (section 9); and transportation data.

Utilize this, and other pertinent safety information in the management of the spill.

In all instances, assistance in managing chemical spills must be requested through the Fire Department.

Section V: RADIOACTIVE WASTE MANAGEMENT:

Please contact the Radiation Safety Officer at x7807 for information.

Section VI: RELATED SUBJECTS

- a. UAF Hazard Communication Program
- b. UA Environmental Health and Safety Procedures Manual
- c. UAF Safety Program Manual
- d. UAF Laboratory Instruction and Research Safety Training Manual
- e. UAF Hazardous Material Emergency Response Contingency Plan
- f. UAF Chemical Hygiene Plan for Small-Scale Laboratories
- g. UAF Bloodborne Pathogens Policy and Procedures.
- h. UAF Confined Spaces Policies and Procedures
- i. UAF Respiratory Protection Training Policies and Procedures
- j. UAF Laboratory Ventilation Policies and Procedures
- k. UAF 24-Hour Emergency Contact for Shipments of Hazardous Materials

Contact UAF Safety Services or EHS&RM, Hazmat Section for more information.

Section VII: ATTACHMENTS

Material Safety Data Sheets (Sample)
National Fire Protection Association Rating Guide
J.T. Baker Numerical Hazard Ratings and Storage Color-Coding Guide