Title

Hazardous Materials Management

ingredients, and any soil or debris contaminated by spills of those products or intermediates The P-list can be found at 40 CFR section 261.33

Principle Investigator - Lead scientist for a particular research project. If the PI has staff and/or students working for them, then they are also responsible for the training and safety of their subordinates. The PI shall be proficient in all protocols associated with their lab and research, and the PI of a lab is responsible for their lab facilities

Radioactive - Giving off, or capable of giving off, radiant energy in the form of particles or rays, as alpha, beta, and gamma rays, by the spontaneous disintegration of atomic nuclei. said of certain elements

Teratogen - substances that may cause birth defects via a toxic effect on an embryo or fetus

Safety Data Sheet (SDS) - A detailed informational document prepared by the manufacturer or importer of a chemical. The intent of the SDS is to communicate chemical information to downstream transporters and users of the material. The SDS includes information such as physical properties, health and environmental hazards, protective measures, and precautions for handling, storage and transportation.

Sharps - Term for devices with sharp points or edges that can puncture or cut skin

Toxic waste - Poisonous materials that pose a threat to groundwater, which can have long term

Supervisor/ Principle Investigators (PI)/ Research Lab Supervisors (RLS) / Department Lab Coordinators

Conduct assessments to ensure hazardous materials are identified in their department

Ensure the proper PPE is made available to personnel in their department for work with hazardous materials

Ensure personnel are properly trained for the hazardous materials in their area

Conduct periodic observations of hazardous material handling in their department to verify required procedures are followed

Conduct periodic inventories of hazardous materials in their department to ensure accurate count and remove unnecessary or out of date materials

Identify when new hazardous materials are introduced which may require additional training

Ensure hazardous material releases are properly cleaned and reported

Chemical Hygiene Officer

Assist departments who use hazardous chemicals to ensure they are used in a safe manner as well as in compliance with all applicable regulations

Work with Principle Investigators, Supervisors, and other lab personnel to develop, review and approve chemical handling procedures involving hazardous materials and waste

Provide guidance on personal protection equipment selection and use involving hazardous materials

Profile and arrange disposal of all hazardous wastes leaving UAA campus unless other procedures have been established and approved by EHS/RM

Department Safety Coordinator

Assist in department hazardous material assessment

Conduct periodic inspections to identify hazardous materials in their department

Notify supervisor when there is a deficiency identified in the program

Employees

Assess all work to identify hazardous materials prior to each job

Visually inspect PPE prior to every use for defects and damage

Work in hoods or other approved well ventilated areas while handling hazardous materials

Alert department supervisor when additional hazardous materials are identified

Outside Contractors

Perform all work in compliance with their company's hazardous materials management program as approved by the EHS/RM department

If the company does not have a program, they must comply with this program

6. Hazards

Hazardous Materials hazards at UAA may include the following:

Spills of unknown waste materials

Fires or explosions from mismanagement of waste streams

Aged inventory resulting in chemical reaction

Personnel unaware of the hazards of chemicals in use

Employee exposure to harmful chemicals

Equipment damage from chemical exposure

Misidentification and misuse of chemical causing chemical exposure, injury or fire

Impact to the environment when hazardous materials are not deposed of properly

7. Engineering Controls

Engineering controls are design plans or changes to the working environment to prevent or reduce personnel exposure to hazards. The following example of engineering controls should be considered to minimize hazardous material handling and PPE requirements:

Design and installation of equipment to minimize chemical exposure

Installation of adequate hood space to minimize exposure to personnel

Installation of a continuous mechanical exhaust ventilation system inside all chemical storage rooms

Accessibility of proper handling tools and equipment to be used in place of PPE

Utilization of electronic chemical tracking software to assist in tracking hazardous material use

8. Administrative Controls

Administrative controls are safe work practices and procedures designed to reduce the risks associated with workplace hazards. PPE will be implemented as an additional means for protection

or only when engineering and administrative controls are not feasible. Examples of administrative controls include the following:

Train personnel who handle hazardous materialswho

Prior to purchasing hazardous materials personnel must reference the list of P and U-Listed chemical. The P-list can be found at 40 CFR section 261.33 and the U-list wastes can be found at 40 CFR section 261.33. All P and U-listed items found on either list must be reviewed by EHS/RMS prior to purchasing. Employees should be prepared to justify the need for the listed compounds and provide procedures to assure that the compounds can be safely and securely stored on site. In addition, procedures must be developed to safely use the compound. Evidence of end process detoxification or total consumption of the listed compound must be provided prior to purchasing listed compounds. A procedure template can be found in Appendix A.

Storage

All hazardous materials must be stored in approved containers, cabinets, and storage areas. Containers, cabinets, and storage areas will have proper labeling. Materials must not be transferred to unapproved, unlabeled containers, except for actual use or limited lab work. Safe procedures will be used for transferring materials from bulk (spill protection, ventilation, grounding, etc.). The department head should verify proper storage is available prior to ordering a hazardous material.

UAA has the responsibility for complying with the reporting requirements of the Superfund Amendment and Reauthorization Act (SARA Title III). EHS/RM will coordinate and assist with these reporting requirements and may request information from departments when completing the required reports.

Departments should keep accurate inventories of hazardous materials to assist UAA EHS/RM for the completion of the annual Community Right To Know program that is submitted to the local fire department and the State of Alaska. Upon request, departments should be able to supply the location and quantities of all stored hazardous materials. The Chemical Hygiene Officer in EHS/RM serves as the archiving agent at UAA.

Chemical Emergencies

UAA will rely on local available state, municipal, or private emergency services to safely contain and clean-up hazardous material spills or leaks which progress beyond the ability of department staff to safely control. Departments must contact EHS/RM to ensure the proper clean-up method, and or to contact a Hazardous Materials Clean up contractor to manage the spill. All spills regardless of size must be reported to the EHS/RM Chemical Hygiene Officer.

Hazardous Waste Disposal

UAA is classified as a Very Small Quantity Generator Waste (VSQG), which allows UAA to operate with fewer regulatory restrictions, and greatly reduces waste costs. With proper management, the Anchorage campus can retain this classification and ability to economically

dispose of wastes at Municipality of Anchorage Solid Waste Services, Anchorage Regional Landfill Household Hazardous Waste facility.

The University is required to comply with federal standards promulgated under the Resource

Approved storage cabinets (maximum of two per fire zone)

Class I & II	60 gal.
Class III	120 gal.

Inside Storage Room (meeting NFPA Code recommendations)

With sprinkler	4 - 10 gal/sqft

Do not store incompatible chemicals together to prevent a reaction and potential explosion

Do not store paper-based packaging materials like cardboard inside a cabinet

Vents on cabinets are not required, but they are often provided. If vents are provided and not used, the vent openings must be sealed with the bungs supplied with the cabinet or with bungs supplied by the manufacturer of the cabinet. If the cabinet is vented, flame arrestors should be provided on the openings. Also, the vents should be ext

Storage of flammable liquids shall be in NFPA approved flammable storage lockers or in low value structures at least 50 feet from any other structure. Do not store other combustible materials near flammable storage areas or lockers

Bulk drums of flammable liquids must be grounded and bonded to containers during dispensing

Portable containers of gasoline or diesel are not to exceed 5 gallons

Safety cans used for dispensing flammable or combustible liquids shall be kept at a point of use

Appropriate fire extinguishers are to be mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials

Storage rooms for flammable and combustible liquids must have explosion-proof light fixtures

Bulk storage of gasoline or diesel are kept in above ground tanks. Tank areas are diked to contain accidental spills. Tanks shall be labeled with the tank specifications to which it was manufactured. All tank areas shall be designated no smoking - no hot work - no open flame areas

No flames. Hot-work or smoking is not permitted in flammable or combustible liquid storage areas

The maximum amount of flammable liquids that may be stored in a building are 20 gallons of Class IA liquids in containers 100 gallons of Class IB, IC, II, or III liquids in containers 500 gallons of Class IB, IC, II, or III liquids in a single portable tank

Flammable liquid transfer areas are to be separated from other operations by distance or by construction having proper fire resistance

When not in use, flammable liquids shall be kept in covered containers

Class I liquids may be used only where there are no open flames or other sources of ignition within the possible path of vapor travel. Flammable or combustible liquids shall be drawn from or transferred into vessels, containers, or portable tanks within a building only through a closed piping system, from safety cans, by means of a device drawing through the top, or from a container or portable tanks by gravity through an approved self-closing valve. Transferring by means of air pressure on the container or portable tanks shall be prohibited

Maintenance and operating practices shall be in accordance with established

Appendix A UAA Hazardous Materials Management Procedure Template

Material to be Used:	
Scope of Work to be Performed:	

List all chemicals and reagents used in this SOP. Add more rows as needed.

Chemical/ Reagent name	CAS# (if none, enter ósee SDSô)	GHS Non-hazardous? Y or N

Safety Considerations:

List all potential hazards and precautions to take to mitigate them here. Add more rows as needed

Hazard	Precautions

Tools and Equipment:

The following tools and equipment are needed to handle this material. Add more rows as needed

Tools/Equipment	Use (if explanation is needed)

Incident History: List any incidents here that have occurred while handling this material. Add more rows as needed

Storage Requirements: Include special instructions for storage area, container type, labeling, storage quantities, etc. Add more rows as needed:

1	
2	
3	

Handling Procedures: Step by step actions to be taken while handling this material. Add more rows as needed.

Steps	Action
1	
2	
3	
4	

Waste Disposal Procedures:

List steps to be taken for proper decontamination and disposal if all material will not be consumed during the process. Add and adjust steps as necessary.

Steps	Actions
1	Decontaminate disposable items (e.g. pipet tips, plates) and empty chemical containers by triple rinsing with a liquid that will dissolve the material.
2	If water is the solvent, the first rinsing only must go into an appropriate waste container, the remaining rinses contain de minimus quantities of hazardous material and may go in the sink with the water running.
3	If a non-aqueous solvent is used, all rinses must go into an appropriate waste container and the rinsed container placed in a fume hood to allow remaining vapors to be drawn up the hood. Decontaminated items can go in non-hazardous trash.
4	Identify amounts of waste anticipated and appropriate disposal procedures. Segregate waste by hazard class (flammable, corrosive, etc.), state (liquid, solid) and, for organic solvents halogenated and non-halogenated. Store waste appropriately for the hazard class. Contact the CHO or CAS Stockroom Manager if you need assistance.
5	Affix hazardous waste label on all waste containers as soon as the first drop of waste is added to the container.
6	Store hazardous waste in closed containers, in secondary containment, and in your laboratoryôs designated location. Waste containers MUST be closed at all times, except when waste is being added to the container. Waste containers are considered FULL when they contain approximately 75% of the maximum volume. DO NOT OVERFILL ï this is an exposure hazard for all persons handling and disposing of the waste.
7	Call EHS or Lab Support (CAS only) to have full waste containers picked up for disposal by EHS

Documentation of Training and Proficiency

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