

STANDARD OPERATING PROCEDURE
for
HEAVY METAL SALTS (selected)

Location(s): _____

Chemical(s): heavy metal salts: acetates, chlorides, sulfates, nitrates, anhydrides, oxides, hydroxides, etc., of arsenic, cadmium, chromium, cobalt, lead, mercury, osmium, silver, and uranium.

Specific Hazards: Harmful if swallowed, highly toxic, respiratory tract irritation, eye irritation, allergic reactions, cancer hazard (in humans). May damage immune system, kidneys, and lungs.

1. Purchasing: All purchases of this material must have written approval from the Principal Investigator or _____ before ordering. The user is responsible to ensure that a current Material Safety Data Sheet (MSDS) is obtained unless a current one is already available within the laboratory. Quantities of this material will be limited to _____, or the smallest amount necessary to complete the experiment.

2. Storage: Materials will be stored according to compatibility and label recommendations in a designated area: _____. Storage areas will be regularly inspected by _____ to ensure safety. Periodic inventory reductions will be scheduled.

3. Authorized personnel: Use of this material requires prior written approval from the PI or _____, Title: _____. Use will be limited to the following personnel (check all that apply):

Principal Investigator ____ Graduate students ____

Technical staff ____ Post doctoral employees ____ Undergraduates ____

Other (describe) _____

4. Training requirements: The user must demonstrate competency and familiarity regarding the safe handling and use of this material prior to purchase. Training should include the following:

- | | |
|---|--|
| ___ Review of current MSDS | ___ Special training provided by the department/supervisor |
| ___ Review of the OSHA Lab Standard | ___ Review of the departmental safety manual |
| ___ Review of the Chemical Hygiene Plan | ___ Safety meetings and seminars |
| ___ Laboratory safety training (EH&S) | |

5. Use location: Materials shall be used only in the following designated areas in room _____. Check all that apply:

demarcated area in lab (describe) _____

fume hood glove box _____ other (describe) _____

6. Personal protective equipment: All personnel are required to wear the following personal protective equipment whenever handling this material (check all that apply):

Safety goggles _____ Chemical safety goggles Face shield _____

Gloves (type/use):

Incidental Contact: nitrile gloves (8mil or heavier)

Extended Contact: double glove with 8mil nitrile gloves

Lab coat Rubber apron _____ Tyvek clothing _____

Respirator (type) _____ Other (describe) _____

7. Waste disposal: The authorized person using this material is responsible for the safe collection, preparation and proper disposal of waste unless otherwise stated below. Waste shall be disposed of as soon as possible and in accordance with all laboratory and University procedures.

Specific instructions: All solids and liquids containing heavy metals must be disposed of as hazardous wastes. Contaminated dry materials may be placed in the Vet. College Medical Waste Program. Call 253-3288 for information on this program.

8. Decontamination: Specific instructions: Call EHS for assistance.

9. Exposures: Emergency procedures to be followed (from MSDS):

Skin contact

symptoms: irritation

first aid: wash area thoroughly

Eye contact

symptoms: irritation

first aid: wash, seek medical attention if necessary.

Ingestion

symptoms: irritation, stomach aches.

first aid: If the person is conscious and not convulsing, induce emesis by giving syrup of ipecac, followed by water. Perform gastric lavage cautiously. Get medical attention immediately.

Inhalation

symptoms: irritation.

first aid: leave area for fresh air

10. Spills: Spill cleanup materials to be used, location of materials, PPE to be used, disposal of cleanup materials, etc. Please be as complete as possible:

Wearing nitrile gloves and a dusk mask, carefully scoop up small spills with a sheet of paper or a file card. Avoid generating dust. Once most of the solid is cleaned up wipe down surfaces with damp paper towels or lab wipes. Bag the spill clean up materials in a plastic bag for pickup by EHS. If a large quantity of heavy metal salts is spilled (more than a few ounces) or if you don't feel comfortable cleaning up the spill, then call 911.

11. Phone numbers:

Cornell Campus Police **911** (accidents, spills)

Environmental Health and Safety 5-8200

Gannett Health Center 5-5155

12. Other: Special precautions, incompatible/reactive materials, usable shelf life, etc. Please be as specific as possible:

Some heavy metal salts have additional hazards, for example: Silver nitrate is a strong oxidizer and must be kept away from any combustible materials. Osmium tetroxide is a severe skin absorption and inhalation hazard. Mercuric chloride is a skin absorption hazard and very toxic. Read the MSDS for the compound(s) you are using to get additional information on their hazards.

Prepared by: _____

Date: _____

Reviewed/Revised: _____