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Developed By: University Department of Safety and Health

## **Standard Operating Procedures For Handling, Storage, and Disposal of Potassium Dichromate**

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### **Purpose**

The purpose of this document is to establish specific standard operating procedures for storage, handling and disposal of potassium dichromate. The requirements established in this SOP are in conjunction with the University's Chemical Hygiene Plan.

### **Overview**

Potassium dichromate is a known human carcinogen. The bright orange crystalline powder is extremely toxic and a very strong oxidizer. The dust is destructive to the tissues of mucous membranes, respiratory tract, and eyes. Swallowing causes irritation and internal damage and may be fatal. Prolonged skin exposure can result in ulceration, damage to liver and kidneys, and even cancer. Avoid inhaling dust. Avoid contact with skin and eyes. This material is dangerous to the environment.

### **Standard Operating Procedures**

#### *Handling*

1. All manipulations with potassium dichromate that can generate dust, vapors, or aerosols must be conducted in a properly working chemical fume hood, glove box or other suitable containment device to reduce possible inhalation exposures.
2. Proper personal protection equipment (PPE) must be worn at all times to prevent eye and skin contact. The minimum requirement for PPE is safety glasses with side shields, laboratory coat, and protective gloves. The suggested glove for working with this material is either heavy duty nitrile or heavy duty polyvinyl chloride.
3. Be sure to inspect all PPE prior to and after use.
4. Designate an area in the laboratory for only potassium dichromate manipulations. This area must be labeled with the appropriate hazard communication labels. All equipment and PPE

must remain in this designated area. Never remove contaminated equipment or PPE from designated area.

5. Keep good housekeeping procedures. All disposable materials contaminated with potassium dichromate must be disposed as hazardous waste.
6. Chromic and sulfuric acid solution manipulations must be handled in accordance with the guidelines set forth in the University's Chemical Hygiene Plan.
7. The laboratory must be equipped with a working eyewash station and safety shower.
8. Always practice good laboratory hygiene. Wash hands, face, neck and forearms frequently.
9. Any amount of potassium dichromate spilled must be immediately reported as a major spill event.

### *Storage*

1. Potassium dichromate should be stored with other solid oxidizers in a secondary containment container. The secondary containment container should be constructed of a material other than plastic.
2. Do not store potassium dichromate with incompatible materials such as combustible materials, reducing agents, organic materials, finely divided metals, ammonium nitrate, ammonium perchlorate, fluorine, hydrazine, hydrazinium nitrate, hydroxylamine, iron powder, nitric acid, potassium iodide, sodium borohydride, sodium bromide, sodium tetraborate, tungsten and zirconium dusts.
3. Storage cabinets containing this material must be labeled with the appropriate hazard communication label (i.e. Oxidizers).
4. The secondary containment container must be labeled according to University guidelines (i.e. full chemical name; hazard warning words – oxidizer, carcinogen; responsible party).
5. Due to the hazardous nature of the material only minimal quantities of material should be purchased and stored.

### *Disposal*

1. All waste solutions of chromic and sulfuric acid must be disposed as hazardous waste. Chromic acid is prohibited for drain disposal.
2. All residual potassium dichromate powder must be disposed as hazardous waste. The rinse water from empty containers of potassium dichromate must be collected and disposed as hazardous waste.
3. The rinse water from decontamination of all non-disposable equipment must be collected and disposed as hazardous waste.
4. All disposable materials contaminated with potassium dichromate or chromic acid must be disposed as hazardous waste.