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Developed By: University Department of Safety and Health

Standard Operating Procedures For Handling, Storage and Disposal of Titanium Powder

Purpose

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

Overview

Titanium powder a dark grey powder is pyrophoric. The powder can spontaneously ignite/explode in air or when mixed with water. The toxicological properties of this material have not been fully investigated. Exposure to this material may cause eye, skin, gastrointestinal or respiratory tract irritations.

Avoid ignition sources, dust generation, moisture, exposure to air, and strong oxidants. Powder is incompatible with oxidizing agents.

Standard Operating Procedures

Handling

1. All manipulations with titanium powder that can generate dust or aerosols must be conducted in a properly working chemical fume hood, glove box, local exhaust system or other suitable containment device that exhaust directly outside.
2. The titanium powder must not be dried at any time. All manipulation must utilize wet titanium powder.
3. A Class D Fire Extinguisher or dry sand must be maintained in the laboratory during all manipulation with the titanium powder.
4. Proper personal protection equipment (PPE) must be worn at all times to prevent eye and skin contact. The minimum requirements for PPE are safety glasses with side shields, a cotton laboratory coat and protective gloves.

5. Be sure to inspect all PPE prior to and after use.
6. The laboratory must be equipped with a working eyewash station and safety shower.
7. Always practice good laboratory hygiene. Wash hands, face, neck and forearms frequently. Wash hands before eating and do not eat, drink, or smoke in the laboratory.
8. Keep good housekeeping procedures. All disposable materials contaminated with titanium powder must be disposed as hazardous waste.
9. Any amount of titanium powdered spilled must be immediately reported as a major spill event.

Storage

1. The titanium powder must be stored wet in a tightly closed container.
2. Do not store this material with incompatible materials. Reacts with strong oxidizing agents.
3. Storage cabinets containing this material must be labeled with the appropriate hazard communication label (i.e. pyrophoric material).
4. Due to the hazardous nature of the material only minimal quantities of material should be purchased and stored.

Disposal

1. All waste must be collected in a sealable compatible container and disposed as hazardous waste as per University Hazardous Waste Guidelines.
2. All residual materials and rinse water from empty containers of this material 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 this material must be disposed as hazardous waste.
5. **Drain disposal of any of these materials is strictly forbidden.**
6. A chemical pick-up request form must be completed and submitted when the hazardous waste needs to be removed.