Good Practice Sheet for Use of Chromium Trioxide

D1 Storage and handling of closed containers

This sheet will help employers to comply with the requirements of EU Directive 2004/37 and the terms of the REACH authorizations for uses of chromium trioxide. Working with chromium trioxide may cause cancer. This sheet describes good practice to reduce exposure. It covers the points that should be followed to reduce exposure. It is important to follow all the points, or use equally effective measures. This document should be made available to all persons who may be exposed to chromium trioxide in the workplace so that they make the best use of the control measures available.

The Process

This GPS covers activities relating to handling during storage, delivery, dispatch and transportation of chromium trioxide during formulation, surface treatment or chromium plating.

Chromium trioxide is used as such or in formulations. Solid chromium trioxide is supplied in drums as crystals or flakes. Aqueous chromium trioxide solution is delivered in tanks or IBC containers.

The chromium trioxide is delivered to the site. It is stored in a designated area. It may be removed from the store for dispatch to the downstream user or transfer to the production plant.

Photograph shows worker transferring a drum containing chromium trioxide.

Equipment Design and Access

Chromium trioxide is very hazardous to human health and the environment. It is a strong oxidiser and may cause fire or explosion. Therefore it should be handled and stored accordingly. Adequate facilities and equipment should be provided to ensure the worker is not exposed to chromium trioxide and to avoid spillages or releases to the environment during transfer to and from storage and at the point of storage.

- A dedicated, dry, covered, cool, well ventilated and secure storage area must be provided. Access to the storage area should be restricted to suitably qualified personnel. Keep away from combustible and incompatible material. ✓
- At the point of use, adequate containment and protection must be provided to prevent exposure or release. ✓
- Floors, drains and equipment in process and chemical and waste storage areas should be sealed and regularly maintained to ensure integrity to provide effective secondary containment and prevent release to the environment in case of accidents. ✓
- Appropriate containment should be provided when transferring chromium trioxide to prevent environmental contamination. ✓
- Keep in the original container or an approved alternative made from a compatible material. Containers should be clearly and adequately labelled. ✓
- Keep containers tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. ✓
- Empty containers retain product residue and can be hazardous. ✓

Chromium trioxide should be handled and stored according to relevant regulatory requirements and instructions within the supplier's SDS.

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Chromium Trioxide Emissions

Chromium trioxide is completely contained when stored and transferred correctly. Chromium trioxide residues may occur on accidently damaged drums or containers. Appropriate risk management measures should be adopted, as necessary.

Risk Management Measures - Workers

- Workers should wash hands and face before eating, drinking and smoking.
- Ventilation equipment must be regularly inspected and maintained to ensure full working order.
- Storage areas and equipment must be regularly inspected and rinsed to remove residual chromium trioxide, which appears as dark red traces on the equipment. See GPS D4.
- Implement appropriate measures to prevent cross-contamination between equipment and PPE.
- Restrict access to the storage area to permitted workers only by appropriate measures.

Risk Management Measures - Environment

- Wastewater containing hexavalent chromium should not be discharged to surface or groundwater, but treated to effectively remove hexavalent chromium prior to release to the environment or managed as a hazardous waste.
- Floors, drains and equipment in process and chemical and waste storage areas should be sealed and regularly maintained to ensure integrity.

PPE

PPE for normal storage operations, including safeguarding against accidental releases, should be available. This typically includes:

- Protective eye goggles.
- Protective gloves.
- Safety shoes.
- Acid-resistant clothing.

GPS E7 and your supplier's extended Safety Data Sheet (SDS) provide relevant information on PPE.

Training and Supervision

All persons with access to the storage areas must be instructed about the risks of working with chromium trioxide, the safe way of handling chromium trioxide and use of PPE and other control equipment. Workers must be properly trained and equipped to carry out their duties, and to safely cease such duties as needed. Adequate supervision must be provided at all times.

Monitoring

Adequate monitoring data must be available to evidence absence of worker exposure and evaluate environmental release. Static air measurement should be available for the storage area to demonstrate absence of emission.

GPS E1-E4 provide further information on monitoring. Expert input is advisable to ensure an appropriate monitoring program that also meets regulatory requirements.

Monitoring should be carried out annually until there is adequate evidence that exposure is minimised. Monitoring may be reintroduced following significant changes to the system.

Other Relevant Good Practice Sheets

Other GPS are also likely to be applicable. A full list can be accessed at link.

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