# Good Practice Sheet for Uses of Chromates

# D2 Sampling[1]

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 chromates. Working with chromates 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 chromates in the workplace so that they make the best use of the control measures available.

## The Process

This GPS covers activities relating to quality control of chromate solutions used for surface treatment.

This GPS covers regular sampling of chromate solutions in treatment tanks to allow adjustments as necessary to control the quality of the surface treatment.

This GPS also covers sampling of chromate solutions during formulation activities to check conformity against the specification.

## Equipment Design and Access

Typically, samples are manually obtained directly from the metal treatment tank (or a connected reservoir or storage tank) or, in the case of formulation, from the mixing tank by a trained person. Access to the plating/treatment line, mixing tank is necessary to obtain the sample.

- ✓ Some different possible tank configurations are described in GPS series A and C.
- ✓ Typically, the trained operator will obtain a sample from the tank using an appropriate scoop or beaker, or similar specialist tool.
- ✓ During sampling the production line is typically operational (i.e. in production mode). Consequently the solution can be hot and/or highly concentrated.
- ✓ The samples are transferred to suitable containers, securely closed and transferred in a bucket, trolley or box to the laboratory for analysis.

[1] Chromates may include the following substances: Chromium Trioxide (S1), Dichromium tris(chromate) (S2), Potassium dichromate (S3), Sodium dichromate (S4), Strontium chromate (S6), Pentazinc chromate octahydroxide (S7), and Potassium hydroxyoctaoxodizincatedichromate (S8).

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## Chromates Emissions

Chromate mist or aerosols can be released from the tanks when the lids are opened. Leakage may occur. Residual chromate on equipment surfaces (plating cells) might be possible in some systems.

## Risk Management Measures - Workers

- For surface treatment processes, adequately designed and functioning LEV must be provided. LEV must be regularly inspected and maintained to ensure full working order. The LEV must be switched on during sampling involving manual access to the tank.
- For electroplating processes, the electric current must be switched off during sampling involving manual access to the tank.
- Appropriate sampling equipment must be used. The samples must be transferred directly to appropriate containers and transported to the laboratory with adequate secondary containment.
- All persons with access to the production line must be instructed in dealing with chromates and be equipped with PPE.
- Sampling equipment must be regularly inspected and rinsed to remove residual chromates, which appears as colored traces on the equipment. See GPS D4.

## Risk Management Measures - Environment

- The air extraction system must discharge to atmosphere via a filtration or scrubber unit capable of removing chromates effectively to as low as practicable levels.
- 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 disposed of as hazardous waste.

## Personal Protective Equipment (PPE)

To minimize potential exposure to chromates, all persons accessing metal surface treatment line for sampling must wear:

- chemical resistant eye protection
- protective gloves
- safety clothing / footwear.

GPS E1 and your supplier's extended Safety Data Sheet (SDS) provide relevant information on PPE.

## Training and Supervision

All persons with access to operations for sampling must be instructed in the risks from working with chromates, the safe way of handling chromates 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 available at all times.

## Monitoring

Adequate monitoring data must be available to evidence that potential exposure of workers and potential environmental release are maintained to as low as reasonably practicable level. Expert input is advisable.

Monitoring should be carried out at least annually. Downstream users may reduce the frequency of measurements once it is demonstrated that exposure of humans and releases to the environment has been reduced to as low a level as technically and practically possible and that the risk management measures and operational conditions correspond to the exposure scenarios and function appropriately.

GPS E2 provide further information on monitoring, including reference to relevant standards.

## Other Relevant Good Practice Sheets

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

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