# Good Practice Sheet for Uses of Chromates

# D4 Maintenance, repair and installation related to the existing process line when the equipment contains chromates[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 the maintenance and repair of existing components or equipment. Regular maintenance activities are conducted when the bath solutions are at ambient temperature and no aerosol formation can be expected.

Plant and equipment must be checked periodically according to a maintenance plan to ensure it is operating optimally.

This GPS describes minor maintenance and cleaning activities that can be carried out when the plant is nonoperational, but chromates solution or electrolyte remains in the bath, vessel or equipment.

These activities should be subject to a permit-to-work system in most cases. Management of risks relating to exposure to chemicals including chromates should be accounted for as part of the permit-to-work system.

## Equipment Design and Access

The equipment design is described in GPS A and C. Full access to all components of the plant/equipment is required for maintenance, repair and installation. A specific risk assessment and permit to work system must be in place for all scheduled maintenance activities.

[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 residues on equipment surfaces such as plating tanks, lids, extraction lips, racks and spray guns might be possible. Released residual material in pumps or pipes could splash. While the process is nonoperational, low levels of airborne aerosols or dusts relating to residual chromate cannot be discounted.

Appropriate risk management measures should be adopted, as necessary.

## Risk Management Measures – Workers[2]

- The electrical current to the plating/surface treatment plant and auxiliary plant must be switched off.
- A permit-to-work system that takes into account specific chemical exposure must be in place for all maintenance, repair and installation works. Approval for such works must be gained according to the permit-to-work system.
- Prior to commencing work, surfaces should be thoroughly cleaned by rinsing with low pressure water. Pipework, pumps and other closed equipment with potential residual chromate solution must be gently flushed with water. Reducing agents should be used.
- Replaced parts and components may or may not be cleaned to remove residual chromates prior to disposal in accordance with relevant legislation.
- Effective access control must be in place.

## Risk Management Measures - Environment

- The air extraction system must discharge to atmosphere via a filtration or scrubber unit capable of removing chromates efficiently and consistent with best practice.
- 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 conducting maintenance work wear:

- protective eye goggles
- protective work gloves
- safety clothing / anti-static protective boots
- air-fed masks/full-face masks with P3 filter for higher risk operations with an increased potential for exposure (e.g. exchange of HEPA filters on air extraction equipment)
- half-face respirator with P3 filter at all other times.

GPS E1 and your supplier's extended 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.

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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[2] RMM and OC outlined below relate to management of chromate exposure only. Other risks associated with the activity are not considered in this GPS.