

Good Practice Sheet for Uses of Chromates

C11 Surface treatment with chromates¹ by brushing with electric current

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 industrial surface treatment of articles by brushing small areas (e.g. scratches and minor damages) with a chromate-based electrolyte applied by a brush to which an electric current is applied. When contact to the part is made, the current is completed, and the coating is deposited at the surface of the part. The process, also named selective electrolysis brush is typically portable and manually operated to allow repair of stationary parts that are either difficult to move or disassemble.

Equipment Design and Access

Workers use a small brush (as supplied by the formulator) to apply a surface treatment containing chromates to small areas, typically during quality control, maintenance or repair.

The selective electrolysis brush plating process can be practiced in a closed glove box or not.

The process needs a power pack to deliver direct and reverse current (0- 50V).

The process is typically carried out at room temperature. The process temperature is always <60°C.

¹ Chromates may include the following substances: Dichromium tris(chromate) (S2), Potassium dichromate (S3), Sodium dichromate (S4).

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Chromates Emissions

Equipment is designed to minimise exposure and release during use. There is potential for chromate electrolyte to spill during brush operations. Residual chromates on equipment surfaces might be possible.

Risk Management Measures - Workers

- Process equipment must be regularly inspected.
- Implement appropriate measures e.g. provision of local cleaning facilities and hazardous waste management bins to prevent cross-contamination from equipment and PPE to adjacent areas.

Risk Management Measures - Environment

- Floors, drains, equipment in process, chemicals and waste storage areas should be sealed and regularly maintained to ensure integrity.

PPE

To minimize potential exposure to chromates, all persons carrying out touch up operations must wear:

- protective eye goggles
- protective gloves
- safety clothing.

GPS E1 and your supplier's extended SDS provide relevant information on PPE.

Training and Supervision

All persons carrying out these operations must be instructed about the risks of 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 at [Link](#).

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