

E1bis Selecting and applying Risk Management Measures¹

This sheet will help employers to comply with the requirements of EU Directive 2004/37 and the terms of the REACH authorisations 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.

Understanding your obligations as a Downstream User of an Authorisation

Downstream users must comply with relevant conditions in any Authorisation covering their use of a substance, on its own or in a mixture. They have to carry out processes using such substances in accordance with the Operational Conditions (OC) and Risk Management Measures (RMM) set out in relevant and up-to-date Exposure Scenarios (ES) attached to the extended **Safety Data Sheets** (SDS) (e-SDS) from their supplier. The human health hazards associated with chromates are described in GPS **E6** (new E4bis). Downstream users must ensure exposure to chromates in the form of liquid splashes, aerosols or mists, gases or dusts is minimised so far as possible. This requirement is consistent with EU-wide health and safety legislation, including Directive 2004/37/EC.

A systematic review is recommended to check all relevant conditions have been met and that appropriate OC and RMM are in place and functioning as intended. This review should be completed and the downstream user satisfied that these requirements have been met before environmental or worker measurements proceed. Failure to do so may result in unacceptably high exposure levels.

Confirm your use is covered by the Authorisation

The e-SDS include specific conditions of the authorisation relevant for Downstream Users.

- You must ensure the latest version of the e-SDS for the relevant authorisation² provided by your supplier is available to you.
- Your use of chromate, including detailed definitions on the application and markets for your supply chain, must be consistent with the scope of the authorisation you rely on.
- You must review the e-SDS to check all activities involving your use of the substance are covered. In case they are not, contact your supplier.
- The physical form of the substance and maximum concentration of the chromate in the product must be consistent with the information in the e-SDS.
- Annual and daily tonnage of the chromate used should be consistent with the information in the e-SDS. Note the tonnages in the e-SDS refer to the chromate ion, not the substance.

Select and Apply OC and RMM

An explanation of OC and RMM is provided in ECHA Guidance Document R13 (https://echa.europa.eu/documents/10162/13632/information_requirements_r13_en.pdf/1f6d95d0-a9cb-479d-889e-f7f528e69fbd). OC and RMM are specified to reduce exposure in the environment and/or workplace. The e-SDS set out the minimum OC and RMM that must be in place for each activity. OC and RMM may be specific to the form of the substance. Downstream users may select and apply additional or more stringent OC and RMM as appropriate.

- Relevant OC may specify the maximum duration and frequency of the activity, the location and level of automation of the activity, and conditions such as temperature or pressure.
- Applicable RMM may include the level of containment and the type of ventilation and/or local exhaust ventilation (LEV) and Personal Protective Equipment (PPE) to be provided for a specific activity. They may set out requirements for air and wastewater treatment and waste management, including the design efficiency of such technology.

Downstream Users must identify from the ES those OC and RMM relevant to the activities they carry out. They must check these OC and RMM are in place and functioning as intended. E.g.:

- Equipment designed to evacuate or treat chromates in air or water should be assessed with regard to best **industry** practice.
- Such equipment must be maintained and tested regularly to ensure it is effective.
- PPE should be assessed for effectiveness.

¹ Chromates 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 hydroxyoctaoxidizincatedichromate (S8).

² The substance must be purchased, on its own or in a mixture, via the supply chain of the authorisation holder.

E1bis Selecting and applying Risk Management Measures¹

Select and Apply OC and RMM (*continued*)

All ES for chromate substances assume each downstream user facility has in place effective occupational health and safety management systems. E.g.:

- Access to operational areas is restricted by appropriate measures.
- Appropriate measures are implemented to prevent cross-contamination from equipment and PPE to adjacent areas.
- Workers are instructed about the risks of working with chromates, the safe way of handling chromates and use of RMM.
- Workers are trained and equipped to carry out their duties, and to safely cease such duties as needed.
- Adequate supervision is provided at all times.

When conducting the review of OC and RMM for an authorized substance (i.e. elimination or substitution is not possible), downstream users should consider the general requirements to reduce exposure as far as possible through:

- Design of work processes.
- Evacuation of chromates at source, while minimizing release to the environment.
- Applying suitable working procedures and methods.
- Use of personal protection measures, including **Personal Protective Equipment (PPE)**.

RMM(s) should be selected with reference to the expected efficiency delivered when the RMM is operating properly and as intended.

RMM selection should be validated through monitoring. Requirements for worker exposure and environmental monitoring are described in GPS E2 and GPS E3.

Use of PPE to reduce workplace chemical exposure

PPE are devices worn by workers to protect them individually from exposure of hazardous substances, via inhalation or contact to skin and eye. PPE can be an important measure for controlling / reducing worker exposure in case of potential eye, skin or inhalation exposure to chromates.

Adequate PPE must be worn at any time intentional or accidental exposure to chromates is possible and, at a minimum, when the use of PPE is recommended in e-SDS. The requirements for PPE depend on the nature of activities or tasks and requirements should be determined based on risk assessment coupled with monitoring data. As noted above, PPE is the final level of control against hazardous substances and should be selected once available design, engineering and administrative controls to achieve a safe working system are in place.

The specifications for PPE to be worn for each activity or task is set out in GPS series A-D, which describe the RMM applicable for any activity.

Additionally, downstream users must ensure:

- All persons with potential contact to chromate are instructed about the use of PPE.
- **Respiratory Protective Equipment (RPE)** must be properly fitted and fit tested by a competent person.
- Good occupational hygiene is in place to prevent cross contamination of PPE with chromates.
- PPE is regularly cleaned, maintained and/or replaced to ensure it is effective.
- Advice for selection and use of PPE in the e-SDS is always followed.

¹ Chromates 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 hydroxyoctaoxidizincatedichromate (S8).

E1bis Selecting and applying Risk Management Measures¹

Respiratory protection

Chromates can cause cancer when inhaled or ingested. Different masks/filters provide different levels of exposure protection. Respirator selection for each task must be based on known or anticipated exposure levels, taking into account other risk management measures in place.

- A properly fitted air-purifying or air-fed respirator complying with an approved standard is typically appropriate when higher potential for exposure to chromate dusts/powders or mists/aerosols.
- A properly fitted half- or full-face mask with P3 particle filter (sometimes also called "P3 filter mask") is typically recommended when lower potential for exposure to chromate dusts/powders or aerosol/mist is possible.
- No respiratory protection may be needed in case exposure to chromates might be unlikely.

National authorities determine the protection level assigned to any particular mask or filter so this must be confirmed locally (see EN 529). A paper mask is not sufficient when a P3 particle filter is specified.

Protective eye goggles

Some chromates are corrosive. Protective eye goggles are needed when contact with eyes is possible.

Tightly fitting safety goggles complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Face shields are required where facial skin protection is needed. They can only be used in conjunction with eye protection. The face shield is not a substitute for the safety glasses or goggles.

Applicable Guidance and Standards

Directive 89/656/EEC provides minimum requirements for PPE used by workers at work.

Directive 89/686/EEC provides requirements for the design, manufacture and supply of PPE.

EU Member States implement these directives into labour law. National requirements for PPE may apply such as the UK_HSE HSG53, the French INRS ed6106.

EN529:2006 (as potentially updated) Respiratory Protective Equipment.

Most PPE is manufactured in accordance with the relevant standard. Consequently, almost all PPE for use at work is marked according to the coding rules of the relevant EN Standards.

Protective Gloves

Chromates are sensitizing and some are corrosive. Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times to prevent skin contact when a risk assessment indicates this is necessary. The e-SDS may provide the breakthrough time for the product. Glove manufacturers may also confirm adequate breakthrough time (>1 hour) for Cr(VI). Suitable glove materials may include: butyl rubber (IIR); fluorinated rubber; polychloroprene; polyvinyl chloride.

Gloves must be changed immediately after contamination with chromate and disposed according to relevant regulations.

Acid-resistant clothing / footwear

Chromates are corrosive and sensitizing. PPE such as a chemical-resistant protective suit or shoes to prevent skin contact is specified based on the potential for exposure associated with the task being performed.

¹ Chromates 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 hydroxyoctaoxidodichromate (S8).