

Everything you need to know about chromium:

- Is metallic chromium hazardous to health or the environment?**
 No. Metallic **chromium** is completely harmless. The electrodeposited metal is used to cover household items, furniture, machine parts, and vehicle components. The surfaces deposited metallically are completely free of chromium(VI).
- Are chromium trioxide and chromium(VI) the same thing?**
 Yes. Hexavalent chromium, such as chromium(VI) oxide, is also called chromium trioxide (CrO₃), because it needs three oxygen atoms to form a hexavalent compound. Chromium(III) is something completely different. It only forms trivalent compounds – chromium(III) hydroxide, for example – and is less reactive.
- Can I continue using chromium(VI) electrolytes at present?**
 Yes, in line with the currently applicable standards. Chrome plating in gravure printing already satisfies the highest safety standards of all industrial applications. See below for future regulations under REACH.
- Are chromium(III) electrolytes subject to usage restrictions?**
 No. Trivalent chromium electrolytes are less toxic than a copper bath. What's more, our materials are registered and are not classified as requiring authorization.

Chemical compound	Formula	Valency	Toxicity	Application
Metallic chromium	Cr	0	Completely safe	Metal deposited from chromium(III) or chromium(VI) electrolytes
Chromium(VI) oxide, chromium trioxide (oxide of hexavalent chromium)	CrO ₃	+6	Toxic and carcinogenic	Typically, in electrolytes for hard chrome plating gravure cylinders
Chromium(III) salts such as chromium(III) hydroxide	e.g. Cr(OH) ₃	+3	Lower than a copper bath	A new kind of electrolyte, completely free of chromium(VI), for hard chrome plating gravure cylinders

Everything you need to know about chromium trioxide in the context of REACH:

- How is the use of chromium trioxide in chrome-plating baths for gravure printing regulated?**
 The ECHA lists chromium trioxide in REACH Annex 14. This means its use is banned – unless an authorization has been issued. Gravure printing is currently covered by an “upstream consortium application” (name of consortium: “CTAC”). An application for authorization has been submitted, but the EU Commission has not yet reached a final decision. Because it was an initial application when the REACH Regulation was newly adopted, the unrestricted use of chromium trioxide can continue until a final decision has been reached.
- If authorization is secured for chromium trioxide, how long will it be valid?**
 We are currently expecting authorization to be valid until September 2024.
- What happens once that authorization expires?**
 In our view, it is no longer expedient to apply in a consortium with other industries. We need to apply for a narrow authorization specific to gravure printing while also working on the use of alternatives that are available on an industrial level.

ECHA	REACH	Chromium(VI) oxide or chromium trioxide
European Chemicals Agency: Authority responsible for assessing applications/licenses for chemicals in the EU.	An EU chemicals regulation that entered into force on June 1, 2007. REACH stands for “Registration, Evaluation, Authorisation and Restriction of Chemicals”. It stipulates the need for license approvals to use substances of very high concern (SVHC). Annex 14 lists these substances.	An oxide of chromium, a salt that dissolves readily in water. Chromium trioxide is used in the electrolyte for hard chrome plating items such as gravure cylinders. It is highly toxic and hazardous to the environment. Chromium trioxide is listed in Annex 14.