

Piazza delle Istituzioni, 11 – 31100 TREVISO
Reg. Imp. di Treviso – REA 325367
cf e p. IVA: 00130830284
e-mail: info@ecometal.org

Associato a UNINDUSTRIA TREVISO

REACH – Applications for authorization - ECHA Consultation no. 0032-02

Comments by ECOMETAL on the

ANALYSYS OF ALTERNATIVES

Submitted by: LANXESS Deutschland GmbH

On the substance: Chromium trioxide, EC No: 215-607-8, CAS No: 1333-82-0

For the use title: Functional Chrome Plating

With use number: 2

Presentation

ECOMETAL is a non-profit organization set up in 1994 as “*Consortium for the sustainable development of plating industry*”, its activity is focused on research and development of new technologies, promotion of products of plating industry and whatever activity is aimed at improving the relationships between plating industry and the environment. Members of ECOMETAL are 51 SME (38 plating enterprises, 5 suppliers of services, 4 suppliers of chemicals, 3 engineering companies and 1 customer) and three associations.

We comment in this document the Analysis of Alternatives.

Before presenting our arguments, we stress that the high number (12) of “*alternatives*” considered in the Analysis testifies for the efforts made by Industry to find alternatives to the use of chromium trioxide and we also stress that when an alternative becomes suitable for the application, Industry is always willing and ready to implement and use it.

Comments about the possible alternatives

From the *Broad Information on Use* and Chapter 3 of the *Analysis of Alternatives* we understand that chromium trioxide is one of the components of the water based mixture (bath) used in the electrochemical process of depositing a coating of metallic chrome on the surface of a huge number of metallic articles. We also understand that the process bath is

Consultation 0032-02	Non confidential	6 October 2015
The President	Comments on the AoA by LANXESS on use of Chromium trioxide	Page 1 of 3

dangerous whereas the coating of metallic chrome is entirely free of hexavalent chrome, it is absolutely harmless and it combines an incredible amount of unique technical functions.

We stress that the coating of metallic chrome is absolutely harmless therefore, according to REACH (Art. 57), there is no reason for authorization nor to look for alternative to this coating.

We argue that the authorization is needed for the **process** of plating that makes use of dangerous substances (chromium trioxide) and not for the result of that process (the coating of metallic chrome) because it is harmless.

We think that our argumentation is coherent with the definition of "use" given by REACH (Art. 3(24)): "Use: means any processing, formulation, consumption, storage, keeping, treatment, filling into containers, transfer from one container to another, mixing, production of an article or any other utilization". According with this definition, the use "Functional Chrome Plating" either is a "processing" or is a "treatment".

As far as alternatives are concerned, REACH never provides a definition of "alternative" nonetheless in various articles of Title VII it is written "suitable alternative substances or technologies" (Art. 55; 60; 64).

In its *Guidance on the preparation of an application for authorization (January, 2011; § 3.2.)* ECHA explains that an alternative "should be able to replace the function that the Annex XIV substance performs. The alternative could be another substance or it could be a technique (e.g. a process, procedure, device, or modification in end product) or a combination of technical and substance alternatives. For example, a technical alternative could be a physical means of achieving the same function of the Annex XIV substance or perhaps changes in production, process or product that removes the need for the Annex XIV substance function altogether". We argue that the function performed by chromium trioxide (the Annex XIV substance) in the process of *Functional chrome plating* is to supply the chromium ions.

Dealing with alternatives to *Functional chrome plating*, the applicant first lists (Chapter 6.2, Table 8, pages 52-53) and later on provides (Chapter 7) a careful and detailed assessment of 12 so-called "alternatives".

We remark that of these 12 "most promising alternatives for chromium trioxide in functional chrome plating" listed in Table 8, only *Trivalent hard chromium* relates to the **process** for producing a metallic chrome coating. The applicant clearly states this point: "The trivalent chrome (Cr(III)) plating alternative relates to an electrodeposition process for producing a metallic chrome coating from a trivalent chromium electrolyte" (Chapter 7.7.1, General information, page 100). The other 11 alternatives relate to processes whose result is not a coating of metallic chrome but a coating of something else.

Consultation 0032-02	Non confidential	6 October 2015
The President	Comments on the AoA by LANXESS on use of Chromium trioxide	Page 2 of 3

Therefore, among the supposed alternatives listed in Table 8 only the *Trivalent hard chromium* is a true alternative because it is a **new different process** that allow to deposit an harmless coating of metallic chrome.

The applicant writes that: "*The Cr(III) plating process is in general based on a similar electroplating technology as the process with chromium trioxide*". The most important difference is that in this process: "*The chromium in the electrolyte derives from chromium trichloride*" (that is not a SVHC substance). As a matter of fact, in the chromium plating process, chromium trioxide and chromium trichloride (as well as chromium sulfate) have the same function of supplying the chromium ions that reduce to metallic chrome on the cathode surface.

We would like to draw the attention of RAC and SEAC on an analogous case. LINXENS FRANCE SA has recently applied (consultation number 0011-02) for the following authorization: "*Industrial use of diarsenic trioxide as processing aid in gold electroplating*". In its Analysis of Alternatives the applicant evaluated 11 different alternatives and, obviously, none of these relates to the coating of gold. As far as we know, gold (as well as metallic chrome) is not a substance of very high concerns and therefore there is no need to look for alternatives to it.

In conclusion, we claim that only the "*Trivalent hard chromium*", is a process alternative to *Functional chrome plating*, (and that chromium trichloride is a substance alternative to chromium trioxide in this electroplating process) and we regret having to take note that, unfortunately, it is not a suitable alternative.

Consultation 0032-02	Non confidential	6 October 2015
The President	Comments on the AoA by LANXESS on use of Chromium trioxide	Page 3 of 3