

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT  
Division or Section of APCD/Stationary Sources Program

**INTER-OFFICE COMMUNICATION**

TO: Air Pollution Control Division **PS 97-5**

FROM: Jill E. Cooper, Regulatory Compliance and Support Program

DATE: 4 June 1997

RE: Frequently Asked Questions Concerning the Chromium Electroplating and Chromium Anodizing MACT

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The following are frequently asked questions and answers concerning the chromium electroplating and anodizing MACT that have arisen and we have received an "opinion" from EPA. As we obtain other questions and answers this list will be updated.

- 1) If a source adds a wetting agent that is a "component" of a bath solution and the source must mix the bath to specifications as required per the source's process, is it an additive or ingredient?

A component that is an integral part of a bath solution is considered an ingredient. The case at point involved a component that had to be added in order for the bath solution to operate properly. EPA determined that even though the component must be added by the source, it is shipped and treated as an ingredient to the bath.

The intent of the language in this regulation is to exempt from work practices those facilities that use trivalent chromium baths if the bath components were purchased from a vendor who includes the wetting agent as an integral component of the bath solution. The bath mixture does not have to contain the wetting agent when purchased from the vendor. The common practice is for the vendor to sell the user the wetting agent along with other necessary components of the bath as a total package. The key is that the wetting agent is purchased from the vendor as a necessary component of the bath and it is not purchased separately from another source.

- 2) A facility does not apply the electrical process to the "tank" filled with the chrome bath. Instead the chrome bath is routed or passed to a "pipe" which is where the electrical process occurs applying the chrome finish to the inside of the pipe. Does the MACT apply to the "pipe?"

Answer is pending (U.S. EPA).

- 3) What, if any, enforcement action may be taken against a source if they have missed the deadlines (decorative 1/25/96, 5/24/96, and 7/24/96; hard and anodizing 1/25/97, 5/24/97, and 7/24/97)?

If the source responds to our notifying them of the applicability of the MACT

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promptly and in good faith, then it will be less likely that the Division will pursue any enforcement actions. However, we cannot guarantee no enforcement action will occur. Facts and circumstances may result in a source being issued a notice of violation.

- 4) A decorative chromium source that uses a hexavalent solution informed me that they could not use a trivalent solution, because the use of a trivalent solution does not provide an adequate surface for their purposes.

- 5) Does the regulation apply to a reverse conversion tank?

No, U.S. EPA has determined that 40 CFR Part 63, Subpart N, does not apply to a reverse conversion tank, because no electric current is applied in the tank.

- 6) Is a source in compliance if the source has not yet done any testing? In other words, the compliance date is January of 1996 and 1997, but the performance tests are not required until July of 1996 and 1997, respectively. In addition, most of the sources have missed the relevant dates: initial notification, notification of compliance, and notification of initial performance test. Thus, these sources have not met the letter of the law of Subpart N.

Technically, a source is not in compliance with Subpart N if the source has not sent the required notifications and has not determined whether it meets the applicable emission limit. If it is a decorative chromium facility or chromium anodizing facility adding a wetting agent, the source should have been taking surface tension measurements all along. If the source kept record of this, then arguably the source is in compliance with the standard, but not the notification. If it is a decorative chromium facility that uses a trivalent bath with a wetting agent as an ingredient, then keeping records of the purchase of the bath components with the wetting agent clearly indicated in the ingredients is compliance. In that case, the source is only in noncompliance with the notification requirements. Unfortunately, I leave it up to the source to decide which to put. If they know the surface tension has been below 45 dynes/cm or they have kept the purchase records, I tend to lead them towards stating that they are in compliance.

- 7) What is a chemical fume suppressant?

These materials work to reduce the fumes and aerosols from chromium plating baths by reducing the surface tension and forming a foam blanket on the surface of the chrome solution. The foam is largely bubbles created by the evolution of hydrogen from the plating process. The hydrogen is highly explosive and as such you want the bubbles to break easily so that there will not be a heavy build up of hydrogen on the surface of the chrome tank.

- 8) What are limitations associated with using a fume suppressant?

A) It will change the characteristics of the plating bath, including the surface

activity and the wetting of some of the materials in the plating solution (i.e., insoluble materials).

B) It may cause the particles to float or be stirred up in the solution.

C) There is also a change in how the hydrogen is dispersed as it is formed in the solution. The hydrogen will form bubbles that are bigger than without the suppressant. This will also affect the percolation activity of the process, possibly causing materials to be lifted from the bottom of the tank.

D) It has also been reported that fume suppressants cause pitting or cracking of chrome deposits especially in deposits that are heavy and thick. The effect may be more pronounced when fume suppressants are added to a bath which is old and contaminated and a effect of the constituents in the solution and the collateral effect of the surfactant. This may be avoided if the suppressant is added initially to a new bath rather than an add to an old one.

E) Tracks and trails may form because of the transit of the bubbles up the parts as they leave the solution.

F) The bubbles that are formed cover more of the surface and preclude the plating activity and this may cause areas where the plating may be thinner or demonstrate different characteristics from the rest of the deposit.

In decorative solutions the problems encountered are not as readily noticeable because of the thickness of the deposit being so thin. Fume suppressants in decorative baths are common and usually run without any problems.

- 9) How do I know which type of tank we are operating (hard, decorative, anodizing) and whether the regulation applies to these tanks?

Go to the parameter table and determine whether the tanks fits within the listed temperature, amount of  $\text{CrO}_3$ , time product is in the bath, and amp/ft<sup>2</sup> of the electrical current.

- 10) Can a control device not listed in the regulation be used instead of a listed control device?

Yes. Subpart N allows for alternative controls to meet the standard. Any control device that is demonstrated to be in compliance with the standard can be used. The Division and U.S. EPA will make this determination. The source interested in using another control device must submit, at least sixty (60) days before the completion of the performance testing, (7/24/97) the following information:

- a) description of the device,
- b) test results collected in accordance with section 63.3449(c) verifying the performance of the device for reducing chromium emissions to the atmosphere to the level required by Subpart N,
- c) a copy of the O&M plan including proposed work practices standards, and
- d) appropriate operating parameters that will be monitored to establish continuous compliance.

- 11) Have any alternative devices been approved to date?

According to U.S. EPA Merlin Enterprises has an alternative control device that has been approved by U.S. EPA. However, U.S. EPA must approve the use of this alternative control device on a case-by-case basis as meeting the requirements of Subpart N.

- 12) Does Subpart N apply to continuous steel coil chromium plating operations?

It did not apply to such sources based upon the original Subpart N, but according to U.S. EPA, the regulation is being revised to include such sources.