



Understanding the Chromium Electroplating Risk and Technology Review Supplemental Proposal

Public Outreach Presentation

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U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
Research Triangle Park, NC

Purpose

- ▶ Today's webinar is part of EPA's overall outreach strategy to stakeholders; today, we will:
 - ▶ Provide background information on the rulemaking process
 - ▶ Inform the public on the Chromium Electroplating Risk and Technology Review (RTR) proposed rule that was published in the *Federal Register* on February 8, 2012
 - ▶ Describe how written comments can be submitted to the docket
- ▶ Note: This webinar is intended to be an educational overview of the proposal and does not cover all of the proposal details. We will **not** be taking comments on the rule during this webinar. Please refer back to the proposal when crafting your written comments.

Overview

- ▶ Clean Air Act Requirements
- ▶ Overview of Chromium Electroplating Industry
 - ▶ Health Effects of Hexavalent Chromium
 - ▶ Where Do Emissions Come From?
 - ▶ Past Rulemakings on Chromium Electroplating
 - ▶ Why We Did a Supplemental Proposal
 - ▶ Overview of Proposed Rule
 - ▶ Proposed Emission Limits
 - ▶ What Does a Residual Risk Analysis Show?
 - ▶ What is Environmental Justice?
 - ▶ Demographic Analyses
- ▶ How to Submit Comments to the Docket
 - ▶ What Happens After I Comment?
- ▶ Q and A

Clean Air Act Requirements

- ▶ Air Toxics Rules: Maximum Achievable Control Technology (MACT) and Residual Risk and Technology Reviews (RTR)
 - ▶ The Clean Air Act requires EPA to set emission standards for toxic air pollutants from stationary sources based on the best performing facilities in an industry with a maximum achievable control technology (MACT) rule

Clean Air Act Requirements (cont.)

- ▶ EPA is required to conduct two reviews and update the existing standards, if necessary
 - ▶ **Residual Risk Assessment:** To determine whether additional emission reductions are warranted to protect public health or the environment; this is a one-time requirement
 - ▶ **Technology Reviews:** To determine if better emission control approaches, practices or processes are now available; required every eight years

Overview of Chromium Electroplating Industry

- ▶ Three kinds of facilities are covered by this rule
 - ▶ Hard chromium electroplating facilities (e.g., printing press rolls)
 - ▶ Decorative chromium electroplating facilities (e.g., plumbing/bathroom fixtures)
 - ▶ Chromic acid anodizing facilities (e.g., airplane parts)
- ▶ All three types of facilities emit hexavalent chromium
- ▶ Many of these facilities are located in densely populated urban areas
- ▶ Most of these facilities are small businesses and are area sources
 - ▶ Area sources are those that emit less than 10 tons per year of a single hazardous air pollutant

Health Effects of Hexavalent Chromium

- ▶ Hexavalent chromium is a known cancer-causing agent or carcinogen
- ▶ Other potential health effects of hexavalent chromium include:
 - ▶ Respiratory problems
 - ▶ Asthma, cough, shortness of breath and wheezing
 - ▶ Irritation to stomach and small intestine; ulcers
 - ▶ Damage to the male reproductive system

Where Do Emissions Come From?

- ▶ Chromium emissions are produced when bubbles form after an electric current is applied to the plating solution; once the bubbles burst, chromic acid mist is released
- ▶ Two methods for controlling emissions:
 - ▶ Add-on controls such as packed bed scrubbers, composite mesh pad (CMP) scrubbers or HEPA filters
 - ▶ Adding fume suppressants to lower surface tension to produce smaller bubbles and release less chromic acid mist

Past Rulemakings on Chromium Electroplating

- ▶ Original MACT rule - finalized in 1995; amended in 2004
- ▶ EPA proposed a Residual Risk and Technology Review rule in October 2010
 - ▶ Initial Risk Review
 - ▶ Found that remaining risks were “acceptable”
 - ▶ Did not identify any economically-viable control options to reduce risk
 - ▶ Technology Review
 - ▶ Added housekeeping requirements from California Air Resources Board (CARB) rule
 - ▶ Proposed phase-out of perfluorooctane sulfonic acid (PFOS) in fume suppressants
- ▶ EPA took public comment but did not finalize proposal

Why We Did a Supplemental Proposal

- ▶ After the 2010 proposal, EPA received new data on emissions, controls and plant processes from state and local agencies
 - ▶ This information:
 - ▶ Significantly improved our emission estimates
 - ▶ Indicated opportunities for further emission reductions
- ▶ EPA identified cost-effective controls and proposed lower emission limits based on the new information received

Overview of Proposed Rule

- ▶ This proposed rule presents a new technology review and a new residual risk analysis for chromium electroplating and anodizing facilities
- ▶ EPA is proposing more stringent emission limits for each of the chromium electroplating source categories based on those reviews
- ▶ This proposed rule incorporates electronic reporting requirements into the NESHAP

Proposed Emission Limits

- ▶ Proposed emission limits for decorative and chromic acid anodizing facilities
 - ▶ 0.007 microgram/cubic meter for existing sources
 - ▶ 0.006 microgram/cubic meter for new sources
- ▶ Proposed emission limits for small hard chromium electroplating facilities
 - ▶ 0.015 microgram/cubic meter for existing sources
 - ▶ 0.006 microgram/cubic meter for new sources
- ▶ Proposed emission limits for large hard chromium electroplating facilities
 - ▶ 0.011 microgram/cubic meter for existing sources
 - ▶ 0.006 microgram/cubic meter for new sources
- ▶ Or, as an alternative, facilities can choose to maintain surface tension at or below 33 dynes per centimeter (if measured with a tensionmeter), or 40 dynes per centimeter (if measured with a stalagmometer)

What Does a Residual Risk Analysis Show?

- ▶ The CAA requires us to estimate the highest risk or the Maximum Individual Risk (MIR) expressed as “x in a million”
- ▶ This represents the estimated increased cancer risk for a person due to emissions from the chromium electroplating source category, assuming a 70-year period of exposure
 - ▶ In this analysis we estimated for chromium electroplating facilities:
 - ▶ The Maximum Individual Cancer Risk (MIR) based on actual emissions is 20 in a million
 - ▶ 180,000 people have risks of one in a million or more
- ▶ The proposed limits will reduce the MIR by 20-30%

What Is Environmental Justice?

- ▶ EPA defines Environmental Justice (EJ) as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies”
- ▶ Executive Order *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* [E.O. 12898] was signed by President Clinton on February 16, 1994, and calls for federal agencies “to the greatest extent practicable and permitted by law, to identify . . . and address . . . as appropriate, disproportionately high and adverse human health or environmental effects of agency programs, policies and actions on minority populations and low income populations”

Demographic Analyses

- ▶ To determine potential EJ issues, demographic analyses of the minority, low-income and indigenous populations were conducted
- ▶ Percentages of different social, demographic and economic groups within populations living near facilities were compared with total percentages of demographic groups nationwide

Results of the Demographic Analysis for Hard Chrome Plating Facilities

| | | Total | All Minority (%) | African American (%) | Other and Multiracial (%) | Hispanic or Latino (%) | Native American (%) | Below Poverty Level (%) | Over 25 w/o HS Diploma (%) |
|---|-----------------------------|-------------|---|----------------------|---------------------------|------------------------|---------------------|-------------------------|----------------------------|
| Nationwide Demographic Breakdown | | 312,900,000 | 28 | 13 | 14 | 17 | 1.1 | 14 | 10 |
| | MIR (In one million) | | Population With Risk Greater Than 1 In 1 Million | | | | | | |
| Hard Chromium Electroplating | 20 | 131,000 | 44 | 19 | 24 | 33 | 0.8 | 21 | 17 |

*Based on 2010 Census Data

How to Submit Comments to the Docket

- ▶ To download the proposed rule: go to <http://www.epa.gov/ttn/atw/rrisk/rtrpg.html>
- ▶ The public comment period will conclude March 26, 2012
- ▶ Comments may be submitted by one of the following methods
 - ▶ Via U.S. Postal Service: EPA, Mail Code 2822T, 1200 Pennsylvania Ave., NW, Washington, DC 20460 (send 2 copies)
 - ▶ Via fax: 202-566-9744
 - ▶ Via email: www.epa.gov/oar/docket.html, or A-and-r-docket@epa.gov
 - ▶ In person: EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW. Washington DC 20460
 - ▶ Online: www.regulations.gov. Highlight “submit a comment” and add the docket (ID) number, EPA-HQ-OAR-2010-0600

What Happens After I Comment?

- ▶ After the comment period closes, EPA will review every comment that was submitted on time
- ▶ Taking those comments into consideration, EPA will begin to develop the final rule (per a court order, the final rule needs to be signed by the EPA Administrator by August 15, 2012)
- ▶ EPA will prepare a “Response to Comments” document that describes how our final rule either:
 - ▶ Takes the comment into account or
 - ▶ States why we were unable to take the comment into account
- ▶ For more information
 - ▶ Contact Phil Mulrine of EPA's Office of Air Quality Planning and Standards at (919) 541-5289 or mulrine.phil@epa.gov

Q&A
