

RULE 429 **Decorative and Hard Chrome Plating and Chromic Acid Anodizing Facilities -**
Adopted 8/22/89

I. Definitions

- A. Ampere-Hours - means the integral of electrical current applied to a plating tank (amperes) over a period of time (hours).
- B. Anti-Mist Additive - means a chemical which when added to and maintained in a plating tank, reduces the emission rate from the tank.
- C. Chrome - means metallic chrome.
- D. Chrome Plating - means either hard or decorative chrome plating.
- E. Chrome Acid - means an aqueous solution of chromium trioxide (CrO_3) or a commercial solution containing chromic acid, dichromic acid (H_2CrO_7) or trichromic acid ($\text{H}_2\text{Cr}_3\text{O}_{10}$).
- F. Chromic Acid Anodizing - means the electrolytic process by which a metal surface is converted to an oxide surface coating in a solution containing chromic acid.
- G. Chromium - means hexavalent chromium.
- H. Control Equipment - means any device which reduces emissions collected by the emissions collection system.
- I. Decorative Chrome Plating - means the process by which chromium is electrodeposited from a solution containing compound of chromium onto an object resulting in a chrome layer 1 micron (0.04 mil) thick or less.
- J. Emission Factor - means the mass of chromium emitted during a test conducted in the emissions collection system in accordance with CARB Test Method 425, divided by the ampere-hours consumed by the tanks in the tested emissions collection system, expressed as the mass of chromium emitted per ampere-hour of electrical current consumed.
- K. Emission Collection System - means a device or apparatus used to gather chromium emissions from the surface of a chrome plating or chromic acid anodizing tank or tanks. The emission collection system shall incorporate ventilation design criteria contained in the newest edition of "Industrial Ventilation - A Manual of Recommended Practice" published by the American Conference of Governmental Industrial Hygienists.

- L. Facility - means a business or businesses engaged in chrome plating or chromic acid anodizing which are owned or operated by the same person or persons and are located on the same parcel or contiguous parcels.
- M. Facility-Wide Emissions from Hard Chrome Plating or Chromic Acid Anodizing - means the total emissions from all hard chrome plating or chromic acid anodizing at the facility over a calendar year. Emissions shall be calculated as the sum of emissions from the emissions collection system at the facility. The emissions from an emissions collection system shall be calculated by multiplying the emission factor for that emissions collection system by the sum of ampere-hours consumed during that year for all of the tanks served by the emissions collection system.
- N. Hard Chrome Plating - means the process by which chromium is electroplated from a solution containing compounds of chromium onto an object resulting in a chrome layer thicker than 1 micron (0.04 mil).
- O. Plating Tank - means any container used to hold a chromium or chromic acid solution for the purposes of chrome plating or chromic acid anodizing.
- P. Uncontrolled Chromium Emissions from the Hard Chrome Plating of Chromic Acid Anodizing Facility - means the chromium emissions from the emissions collection systems at the facility calculated as if no control equipment is in use. For the purpose of determining compliance with this Rule, the uncontrolled chromium emissions shall be calculated using an emission factor based on tests conducted in accordance with ARB Test Method 425 or 14 milligram/ampere-hour, whichever is less.

II. Requirements for Decorative Chrome Plating Facilities

- A. No person shall operate a decorative chrome plating tank unless:
 - 1. An anti-mist additive is continuously maintained in the plating tank in a manner demonstrated to and approved by the Air Pollution Control Officer to achieve chromium emission reductions of at least 95% as compared to chromium emissions from the tank when an anti-mist additive is not maintained, or
 - 2. Control equipment is installed and used in a manner demonstrated to and approved by the Air Pollution Control Officer to achieve chromium emission reductions of at least 95 percent as compared to chromium emissions from the tank when an anti-mist additive is not maintained or control equipment is not installed and used.

III. **Requirements for Hard Chrome Plating and Chromic Acid Anodizing Facilities**

- A. The owner or operator of a hard chrome plating or a chromic acid anodizing facility shall maintain continuous records of ampere-hours for all plating tanks served by a collection system and shall within six months after the adoption date of this Rule and upon request thereafter, submit the information to the Air Pollution Control Officer.
- B. No person shall operate a plating tank for hard chrome plating or chromic acid anodizing unless the tank has an emissions collection system.
- C. No person shall operate a hard chrome plating or chromic acid anodizing tank unless:
 - 1. the chromium emissions collected by the emissions collection system serving the tank have been reduced by at least 95 percent of the uncontrolled chromium emissions, or
 - 2. the chromium emissions collected by the emissions collection system serving the tank have been reduced to less than 0.15 milligrams (mg) of chromium per ampere-hour of electrical charge applied to the plating tank.
- D. No person shall operate a hard chrome plating tank or chromic acid anodizing tank at a facility if facility-wide chromium emissions from hard chrome plating or chromic acid anodizing are greater than 2 pounds per year but less than 10 pounds per year unless:
 - 1. the chromium emissions collected by the emissions collection systems serving the tank have been reduced by at least 99 percent of the uncontrolled chromium emissions from the facility, or
 - 2. the chromium emissions collected by the emissions collection systems are reduced to less than 0.03 mg of chromium per ampere-hour of electrical charge applied to the tanks.
- E. No person shall operate a hard chrome plating or chromic acid anodizing tank at a facility if facility-wide chromium emissions from hard chrome plating or chromic acid anodizing are 10 pounds per year or greater unless:
 - 1. the chromium emissions collected by the emissions collection systems serving the tank have been reduced by at least 99.8 percent of the uncontrolled chromium emissions from the facility, or
 - 2. the chromium emissions from the emissions collection systems are reduced to less than 0.006 mg of chromium per ampere-hour electrical charge applied to tanks.

IV. **Compliance Schedule - Decorative Chrome Plating Facilities**

- A. No later than three months after the adoption date of this Rule, the owner or operator of a decorative chrome plating tank shall submit, to the Air Pollution Control Officer, application for Authority to Construct the equipment necessary to meet the requirements of II.A.2., and no later than six months after the adoption date of this Rule, the owner or operator of decorative chrome plating tanks must comply with the provisions of II.A.

V. **Compliance Schedule - Hard Chrome and Chromic Acid Anodizing Facilities**

- A. No later than twelve months after the adoption date of this Rule, the owner or operator of a hard chrome plating or chromic acid anodizing facility subject to Sections III.C. shall submit, to the Air Pollution Control Officer, application for Authority to Construct the equipment necessary to meet the requirements of III.B. and III.C., and no later than eighteen months after the adoption of this Rule, the facility shall be in compliance with the requirements of III.B. and III.C.
- B. No later than eighteen months after the adoption date of this Rule, the owner or operator of a hard chrome plating or chromic acid anodizing facility subject to III.D. shall submit, to the Air Pollution Control Officer, application for Authority to Construct the equipment necessary to meet the requirements of III.B. and III.D., and no later than twenty four months after the adoption date of this Rule, the facility shall be in compliance with the requirements of III.B. and III.D.
- C. No later than thirty months after the adoption of this Rule, the owner or operator of a hard chrome plating or chromic acid anodizing facility subject to III.E. shall submit, to the Air Pollution Control Officer, application for Authority to Construct the equipment necessary to meet the requirements of III.B., and III.E., and no later than forty eight months after District adoption of regulations enacting this control measure the facility shall be in compliance with the requirements of III.B. and III.E.