

**SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL DISTRICT
COMPLIANCE DEPARTMENT**

COM 2325

APPROVED: _____ **SIGNED** _____ **DATE:** March 8, 2007
Jon Adams
Director of Compliance

**TITLE: RULE 7011 - HEXAVALENT CHROMIUM – DECORATIVE AND
HARD CHROME PLATING, CHROME ACID ANODIZING**

SUBJECT: INSPECTION OF CHROME PLATING OPERATIONS

OBJECTIVE:

Chrome plating facilities subject to District Rule 7011, and California Health & Safety Code Section 41700, have the potential to release Hazardous Air Pollutants into the atmosphere. This policy applies to District inspection activities associated with determining compliance with District Rule 7011.

PURPOSE:

The purpose of this policy is to describe the procedures to be followed by District Compliance Department staff when they are inspecting these operations to ensure consistency and provide a level playing field for the industry.

POLICY STATEMENT:

BACKGROUND

1. District Rule 7011, which was amended on December 17, 1992, provides the required background and information needed to inspect Chrome Plating Facilities.
2. Rule 7011 applies to each chromium-electroplating tank at facilities performing hard chromium, electroplating, decorative chromium electroplating, or chromic acid anodizing.
3. The Rule is intended to limit emissions of hexavalent chromium to the atmosphere. Hexavalent chromium is chromium that has a valance state of + 6. During the chrome plating process hexavalent chromium can be released into the atmosphere. Hexavalent chromium is a toxic compound and prolonged exposure may increase the risk of cancer.

4. Chrome plating is a multi-step operation. Decorative chrome work pieces are generally electroplated with copper or nickel as one step in the process.
5. In the District, the majority of the chrome plating facilities are decorative chrome plating operations, however, there are some hard chrome plating operations.
6. District Rule 7011 reflects the state Air Toxic Control Measure (ATCM) and the District is mandated to enforce the ATCM. The rule incorporates provisions of the California Code of Regulations, Section 93102.
7. Decorative and hard chrome plating operations must control hexavalent chromium emissions discharged to the atmosphere through the use of add-on control equipment, chemical fume suppressants, mechanical fume suppressants, or through the use of chemical fume suppressants containing a wetting agent.
8. Chrome plating facilities must comply with state ATCM regulations by meeting a surface tension limit using chemical fume suppressants containing a wetting agent or they must meet an emission limit demonstrated by a performance test.

INSPECTION PROCEDURES:

1. Pre-Inspection:
 - a. Review the facility permit and previous inspection reports.
 - b. Review the compliance history for the facility.
 - c. Review District Rule 7011.
 - d. Bring safety gear: hardhat, safety glasses, and steel toed boots.
 - e. Prepare an inspection summary form (see Exhibit A).
2. Inspection Procedures:
 - a. Review the permit with the responsible official or a designee. Confirm that the information is accurate and that it accurately reflects the facility's operation. The inspector should supply or make available any required permit modification forms to the facility.
 - b. Perform a physical inspection and confirm that the facility is compliant with the permit and with the District Rules.
 - c. Decorative Chrome facilities that do not have add-on control devices may use a chemical fume suppressant with a wetting agent. This is a common method of control in the SJVAPCD.
 - i. Check for a continuous recording ampere-hour meter. There should be separate meter for each rectifier. The meter should be hard wired. Ampere-hour meters are similar to the watt-hour electric meters at your home, and a rectifier converts the alternating current to direct current.
 - ii. Record the monthly amp-hour meter reading for each meter.
 - iii. Records of fume suppression additions to the tank should be available for your inspection.

- iv. The owner or operator shall monitor the surface tension of the chemical fume suppressant using a wetting agent with a stalagmometer or tensiometer using EPA Method 306B. Surface tension should be measured daily for 20 operating days and weekly thereafter as long as there is no violation of the surface tension requirement. The requirement is less than or equal to 45 dynes/cm or as limited by the permit.
- v. The facility should have records of breakdowns/repairs performed on the tank, ampere-hour meter or rectifier.
- vi. The facility should also have last year's Ongoing Compliance Status Report completed (see Rule 7011, Appendix 3).
- vii. Facility should have an operational stalagmometer.
- d. Hard Chrome and Decorative Chrome Facilities with add on control devices.
 - i. Check add-on control devices if required by the permit. If there are add-on control devices there should be a pressure gauge for each control device. The owner or operator must continuously monitor the pressure drop across add-on control devices. This is usually accomplished with a pressure gauge which should be easily visible.
 - ii. Pressure drop shall be maintained within 1" water from the level established at performance test for CMP (composite mesh pad), PBS (packed-bed scrubbers, and FBME (fiber-bed mist eliminators).
 - iii. HEPA filters. Pressure drop must be in the range of one-half to twice the pressure established at performance test.
 - iv. Packed-Bed scrubbers must have inlet velocity pressure gauges, and the pressure must be maintained within 10% of the pressure established at performance test. View the water spray.
- e. Air pollution control techniques include:
 - i. Foam blankets. Blankets should cover the entire surface of the tank. The blanket thickness necessary for compliance is established by a performance test, and is to be measured hourly for 15 operating days. If maintained in compliance for this period, measurements can then be made daily.
 - ii. Polyballs. Balls should cover the entire surface of the tank. Daily visible inspections of the polyball coverage should be done, and it should be comparable to the coverage during performance test.
 - iii. Wetting agents. These suppressants reduce the surface tension of the tank liquid. This is verified with a stalagmometer or tensiometer.

- f. Inspection schedule for various components of the add-on control devices can be found in Rule 7011.
 - g. Record review:
 - i. Ampere-hour usage.
 - ii. Surface tension measurements. This is measured with a stalagmometer or tensiometer. The surface tension should be less than or equal 45 dynes/cm or as limited by the permit.
 - iii. Record fume suppressant additions: date, time, and volume.
 - iv. Pressure drop. Record weekly.
 - v. Cumulative rectifier usage. Record monthly and year to date.
 - vi. Inlet velocity pressure.
 - vii. Foam thickness.
 - viii. Breakdown & Repair.
 - ix. Previous year's on-going compliance status report (see Rule 7011, Appendix 3.)
3. Post Inspection:
- a. Determine compliance and inform the owner or operator of the compliance determination.
 - b. Complete inspection form and document any violations.
 - c. Provide helpful information such as District web-site, appropriate rules, and required application forms.