

INSPECTOR CHECKLIST TO COMPLETE PRIOR TO INSPECTION

There are several types of chromium electroplating and anodizing tanks. It is important for the Inspector to know which type of tank(s) he/she will be inspecting at the facility. Therefore, the following questions should be answered prior to the inspection of any chromium electroplating or anodizing tank(s). The answers to these questions will determine which type of tank(s) will be at the facility and which Chromium Electroplating and Anodizing Inspection Checklist(s) must be reviewed prior to the inspection and brought to use during the inspection. There may be more than one type of tank. This checklist can be used for multiple tanks.

1.0 Based on State records and the table below, determine the **number** of chromium electroplating and anodizing tanks operating at the facility which fit within the function(s) and parameters of each type of tank. If the necessary information is not available from State records, the Inspector should contact the owner or operator of the source prior to the inspection and request the necessary information to determine the function(s) and process parameters of each tank.

- Hard (or industrial) chromium electroplating
 Decorative chromium electroplating
 Chromium anodizing

Type of Operation	Functions	Process Parameters
Hard chromium electroplating	Provides a surface with functional properties such as: wear resistance, a low coefficient of friction, hardness, and corrosion resistance	<u>Federal specifications:</u> Plate thickness of 1.3 to 760 microns Current density of 150 to 600 A/ft ² Plating time of 20 minutes to 36 hours <u>Other parameters:</u> Chromic acid concentration of 30 to 50 oz/gal Sulfuric acid concentration of 0.3 to 0.5 oz/gal Solution temperature of 120° F to 150° F
Decorative chromium electroplating	Provides a bright surface with wear and tarnish resistance	<u>Federal specifications:</u> Plate thickness of 0.003 to 2.5 microns (chromic acid bath) or 0.13 to 25 microns (trivalent chromium bath) Current density of 50 to 220 A/ft ² Plating time of 0.5 to 5 minutes <u>Other parameters:</u> Chromic acid concentration of 30 to 50 oz/gal Sulfuric acid concentration of 0.3 to 0.5 oz/gal Solution temperature of 100° F to 115° F
Chromium anodizing	Provides corrosion resistance or electrical insulation	<u>Federal specifications:</u> Chromic acid concentrations of 6.67 to 13.3 oz/gal <u>Other parameters:</u> Film thickness of 0.02 to 0.05 microns Current density of 144 to 720 A/ft ² Anodizing time of 30 to 60 minutes Solution temperature of 90° F to 95° F pH of 0.5 to 0.85 Voltage of 20 or 40 volts

2.0 If a facility's operations do not fall exactly within the function(s) and parameters of one of the types of chromium electroplating or anodizing sources, the Inspector must determine which type it will be considered. The operator is only required to contact the APCD or local regulatory agency and request that the APCD or local agency determine which source type applies. To make such a determination the Inspector can consider a number of factors including the: purpose for which the chrome is being applied, whether a hexavalent or trivalent solution is used, plate thickness, plating time, plate density, chromic acid concentrations, whether sulfuric acid is used, and temperature of the solution. The Inspector and APCD should determine together whether the facility is a hard chromium electroplating, decorative chromium electroplating, or chromium anodizing source.

3.0 If a tank fits within the function(s) and parameters of one of the types of chromium electroplating or anodizing sources, next determine whether it is an exempt source. Indicate that the source is **exempt** if it fits one of the following descriptions.

_____ Research or laboratory operation:

_____ primary purpose of research and development of new processes and products

_____ operations must be conducted under close supervision of technically trained personnel

_____ operation cannot be involved in the manufacture of products for commercial sale, except in a de minimis or minor manner

_____ Process tanks in which neither chromium electroplating nor chromium anodizing is taking place (i.e., rinse tanks, etching tanks, cleaning tanks)

_____ Process tanks that contain a chromium solution, but in which no electrolytic process occurs (i.e., chrome conversion coating tank where no electrical current is applied)

Upon determining a tank is exempt, the Inspector need not inspect that tank pursuant to these Federal regulations.

After determining which type(s) of tank(s) will be at the facility, go to the binder entitled MACT Guidelines and select and copy Chapter 1.0 of the **INSPECTOR'S GUIDANCE MANUAL FOR INSPECTING: CHROMIUM ELECTROPLATING AND ANODIZING TANKS** and a copy of the **INSPECTOR ON-SITE CHECKLIST** for each type of tank represented at the facility. Make the necessary number of photocopies so there is one checklist for each tank at the facility.