

# Plating and Polishing Operations

## 40 Code of Federal Regulations (CFR) Part 63 Subpart WWWW (6W)

### *Summary of Requirements - Process Tanks*

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The following requirements shall be followed in addition to the general summary of requirements, if the facility owns or operates affected **PROCESS TANKS** that **contain** one or more of the **PPMHAP**.

*Process tanks include tanks that perform batch or continuous non-cyanide electroplating, electroforming or electro polishing (referred to collectively as electrolytic process tanks), “flash” or short-term electroplating and electroplating tanks that have cyanide as major constituent in the plating bath.*

#### **GENERAL MANAGEMENT PRACTICES**

- ☑ Minimize bath agitation when removing parts, except when necessary to meet part quality requirements.
- ☑ Maximize the draining of bath solution back into the tank, as practicable, by extending drip time when removing parts; using drain boards (or drip shields); or withdrawing parts slowly from the tank.
- ☑ Optimize the design of barrels, racks, and parts to minimize drag out of bath solution, as practicable.
- ☑ Use tank covers, if already owned and available.
- ☑ Minimize or reduce heating of process tanks when doing so would not interrupt production or affect part quality.
- ☑ Perform regular repair, maintenance, and preventive maintenance of racks, barrels, and other equipment associated with affected sources.
- ☑ Minimize bath contamination by prevention or quick recovery of dropped parts, pre-cleaning of parts to be plated, use of distilled/de-ionized water, and thorough rinsing of pretreated parts prior to plating.
- ☑ Maintain quality control of chemicals, and chemical and other bath ingredient concentrations in the tanks.
- ☑ Perform general good housekeeping and periodic wash downs.
- ☑ Minimize spills and overflow of tanks.
- ☑ Use squeegee rolls in continuous or reel-to-reel plating tanks.
- ☑ Perform regular inspections to identify leaks and other opportunities for pollution prevention.

Electroless plating and other non-electrolytic metal coating processes such as chromate conversion, nickel acetate sealing, sodium dichromate sealing and manganese phosphate coating are only required to comply with the general management practices (these processes do not need to comply with the specific management practices below).

## SPECIFIC MANAGEMENT PRACTICES

### “Electrolytic” Process Tanks:

- Includes new and existing non-cyanide electroplating, electroforming, or electropolishing tanks that operate at a pH less than 12
- Choose one of the following three management options:
  - 1) **Use a wetting agent/fume suppressant (WAFS) in the bath of the tank.** WAFS is any chemical agent that reduces or suppresses fumes or mists from a plating and polishing tank by reducing the surface tension of the tank bath.
    - Must initially add the WAFS in the amounts recommended by the manufacturer for the specific type of process; and
    - Continue to add WAFS in proportion to the other bath chemistry ingredients that are added to replenish the tank bath.
    - If a WAFS is included in the electrolytic bath chemicals used in the affected tank according to the manufacturer’s instructions, it is not necessary to add additional WAFS to comply with this rule.
  - 2) **Capture and exhaust emissions from the tank to one of the following emission control devices: composite mesh pad, packed bed scrubber, or mesh pad mist eliminator.**
    - Operate all capture and control devices according to the manufacturer’s specifications and operating instructions.
    - Keep the manufacturer’s specifications and operating instructions at the facility at all times in a location where they can be easily accessed by the operators.
  - 3) **Install a tank cover.**
    - Batch electrolytic process tanks:** Cover all of the effective surface area of the tank for at least **95%** of the electrolytic process operating time.  
*A batch tank is a tank in which parts, typically mounted on a rack or placed in a barrel, are immersed as a single unit for a predetermined period of time during which none of the parts are removed from the tank.*
    - Continuous electrolytic process tanks:** Cover at least **75%** of the surface of the tank whenever the electrolytic process tank is in operation.  
*A continuous tank is a tank in which a continuous metal strip or other type of continuous substrate is fed into and removed from the tank continuously.*

### “Flash” or Short-Term Electroplating Tank:

- Includes new and existing tanks
- Must choose one of the two following management options:
  - 1) **Limit short-term or “flash” electroplating**
    - The tank shall operate no more than 1 cumulative hour per day **OR** 3 cumulative minutes per hour of plating time.
  - 2) **Install a tank cover**
    - Use a tank cover over all of the effective surface area of the tank for at least **95%** of the plating time.

**Note:** If your short-term electroplating tank is ever used for more than 1 cumulative hour per day or 3 cumulative minutes per hour of plating time, during those periods you must meet the one of the specific management options for “Electrolytic” Process Tanks above.

### Electroplating Tanks that use Cyanide in the Plating Bath:

- Includes new and existing tanks that operate at pH **greater than or equal to 12**
- Measure and record the pH of the tank upon start-up. No additional pH measurements are required.

## COMPLIANCE DEMONSTRATION

### Initial Compliance

- Demonstrate initial compliance with the following requirements:
  - Comply with both the general and specific management practices for your tank type(s);
  - Submit Notification of Compliance Status stating that the general management practices are being followed and the specific management option(s) for your tank(s) have been implemented;
  - Follow the manufacturer's specifications and operating instructions at all times;
  - Statement that manufacturer's specifications have been followed on WAFS or control equipment usage.

### Continuous Compliance

- Demonstrate continuous compliance with the following requirements:
  - Comply with both the general and specific management practices for your tank(s);
  - Always maintain and operate your affected source, including air pollution control equipment.
  - Prepare an annual compliance certification and keep it readily accessible.
  - Follow the additional compliance demonstrations below for your tank management practice(s):
    - WAFS being used:**
      - Record each time WAFS is added to the tank bath
    - Or**
    - Record that the WAFS was added in the original make-up of the tank;
    - Certify annually that WAFS was added to bath according to the manufacturer's specifications and instructions.
  - Control Equipment used** (i.e. composite mesh pad, packed bed scrubber, or mesh pad mist eliminator):
    - Take immediate corrective action following any malfunction of the control equipment or capture system;
    - Certify annually that manufacturer's specifications and instructions have been followed;
    - Record results of all control system inspections, deviations from proper operation, and corrective actions.
  - Plating Time Limited:**
    - Record the times the tank(s) is operated each day.
    - Certify annually that you have limited electroplating to no more than 1 cumulative hour per day or 3 cumulative minutes per hour of plating time.
  - Tank Cover on a Batch Operation or a "Flash" or Short Term Electroplating Tank:**
    - Keep daily records of time(s) the tank is operated and the time(s) the cover is in place.
    - Certify annually that you have operated the tank with the cover in place at least 95% of the electrolytic process or plating time.
  - Tank Cover on a Continuous Operation:**
    - Certify annually that you have operated the tank with at least 75% of the surface covered during all periods of electrolytic process operation.

*Please refer to the full rule text of 40 CFR Part 63, Subpart WWWW (available at <http://www.epa.gov/ttn/atw/area/compilation.html>) to determine all applicable equipment requirements, management practices, monitoring requirements, recordkeeping requirements and reporting requirements necessary to be in compliance with this rule.*

*Additional information is available at <http://www.iowadnr.gov/air/prof/NESHAP/>*

### **For more information or questions please contact:**

Iowa Department of Natural Resources: **1-877-AIR-IOWA**

Iowa Waste Reduction Center: **1-800-422-3109**

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