CHROMIUM ELECTROPLATING AND ANODIZING TANKS

FACILITY INSPECTION CHECKLIST

INSPECTION TYPE: ☐ INITIAL INSPECTION ☐ RE-INSPECTION

FACILITY ID:

FACILITY NAME:

ENTITLEMENT PERIOD: Effective date: End Date:

INSPECTION DATE:

INSPECTOR'S NAME:

INSPECTION COMPLIANCE STATUS:

☐ COMPLIANCE ☐ NON-COMPLIANCE

COMMENTS:

HARD CHROMIUM ELECTROPLATING TANKS (*Open Surface* and *Enclosed*)

Hard Chromium Electroplating Tanks at Facility

{Chromium electroplating tank means the receptacle or container along with the following internal and external components needed for chromium electroplating: rectifiers; anodes; heat exchanger equipment; circulation pumps; and air agitation systems. ***Open surface*** means the tank is ventilated at a rate consistent with good ventilation practices for open tanks. (***Enclosed*** means the tank is equipped with an enclosing hood and ventilated at half the rate, or less, of an open surface tank of the same area.)
Hard chromium electroplating means a process by which a thick layer of chromium, typically 1.3 to 760 microns, is electrodeposited on a base material.}

Tank ID	*Date of Purchase*	*Date of Latest Reconstruc-tion (if any)*	*Total installed rectifier capacity (Amps)*	*Previous 12-month rolling average of actual cumulative rectifier capacity*	*Date (if ever) 12-month rolling average actual cumulative rectifier capacity reached 60 million, or more, amp-hours/year for all tanks*	*Type of Control Device(s)/ Technique(s)**	*Date(s) of Installation of Control Device(s)/ Technique(s)*
Facility Total							

A Hard Chromium Electroplating **Tank** is considered

☐ **Existing**; unless

☐ **New**, because construction or *reconstruction** of the source commenced **after 2/8/2012**.

**Reconstruction* means replacement of tank components, which were replaced to an extent that the fixed capital cost of the new components exceeded 50% of the fixed capital cost that would be required to construct a comparable new source.

Hard Chromium Electroplating **Facility** size:

☐ **Large** *Maximum cumulative potential* rectifier capacity *[Total installed* rectifier capacity *(amps) x 8400 (hours/year) x 0.7]* is greater than or equal to 60 million ampere-hours per year (amp-hours/year).

☐ **Small**

☐ *Maximum cumulative potential* rectifier capacity *[Total installed* rectifier capacity *(amps) x 8400 (hours/year) x 0.7]* is less than 60 million ampere-hours per year (amp-hours/year); or

☐ Records show that the facility's previous *annual actual* rectifier capacity was less than 60 million amp-hour/year, by using non-resettable amp-hour meters and keeping monthly records of actual amp-hour usage for each 12-month rolling period. The *actual cumulative* rectifier capacity for the previous 12-month rolling period shall be tabulated monthly by adding the capacity for the current month to the capacities for the previous 11 months. *If a small hard chromium electroplating facility becomes a large hard chromium electroplating facility, it must comply with the requirements for hard chromium electroplating tanks at large facilities no later than 1 year after the month in which monthly records show that the facility has become large.*

***Control Device Types/Techniques:**	PBS	Packed-bed scrubber
	CMP	Composite mesh-pad system
	PBS/CMP	Packed-bed scrubber and composite mesh pad system
	FS	Fume suppressant
	WA	Wetting agent
	FS/WA	Fume suppressant with wetting agent
	FBME	Fiber-bed mist eliminator
	OTHER	(Approved by the Administrator):

Requirements for *Open Surface* HARD CHROMIUM ELECTROPLATING TANKS[1]		
***Existing* Affected Sources…**		***New* Affected Sources[2]**
…at a *Large* Facility (max cumulative potential rectifier capacity ≥ 60 million amp-hr/year)	**…at a *Small* Facility**	
Concentration of total chromium in the exhaust gas stream discharged to the atmosphere from all open surface hard chromium electroplating tanks at the facility **shall not exceed 0.011 mg/dscm** of ventilation air (4.8×10^{-6} gr/dscf). **Maximum concentration:** ____ **; or** If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Maximum surface tension:** ____	**Concentration of total chromium** in the exhaust gas stream discharged to the atmosphere from all open surface hard chromium electroplating tanks at the facility **shall not exceed 0.015 mg/dscm** of ventilation air (6.6×10^{-6} gr/dscf). **Maximum concentration:** ____ **; or** If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Maximum surface tension:** ____	**Concentration of total chromium** in the exhaust gas stream discharged to the atmosphere from all open surface hard chromium electroplating tanks at the facility **shall not exceed 0.006 mg/dscm** of ventilation air (2.6×10^{-6} gr/dscf). **Maximum concentration:** ____ **; or** If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Maximum surface tension:** ____
The addition of Perfluorooctane sulfonic acid (**PFOS**)-based fume suppressants[3] to any affected open surface hard chromium electroplating tank is **prohibited.** **Have any been added? Yes** ☐ **No** ☐	The addition of Perfluorooctane sulfonic acid (**PFOS**)-based fume suppressants[3] to any affected open surface hard chromium electroplating tank is **prohibited.** **Have any been added? Yes** ☐ **No** ☐	The addition of Perfluorooctane sulfonic acid (**PFOS**)-based fume suppressants[3] to any affected open surface hard chromium electroplating tank is **prohibited.** **Have any been added? Yes** ☐ **No** ☐

[1] ***Chromium electroplating tank*** means the receptacle or container along with the following internal and external components needed for chromium electroplating: rectifiers; anodes; heat exchanger equipment; circulation pumps; and air agitation systems. ***Open surface*** means the tank is ventilated at a rate consistent with good ventilation practices for open tanks. (***Enclosed*** means the tank is equipped with an enclosing hood and ventilated at half the rate, or less, of an open surface tank of the same area.) ***Hard chromium electroplating*** means a process by which a **thick** layer of chromium (typically 1.3 to 760 microns) is electrodeposited on a base material.

[2] ***New affected source*** means the construction or reconstruction of the source commenced **after 2/8/2012**. ***Reconstruction*** means replacement of tank components, which were replaced to an extent that the fixed capital cost of the new components exceeded 50% of the fixed capital cost that would be required to construct a comparable new source.

[3] ***Perfluorooctyl sulfonate (PFOS)-based fume suppressant*** means a fume suppressant that contains 1 percent or greater PFOS by weight. Use of a PFOS-based fume suppressant is prohibited after September 21, 2015.

Requirements for *Enclosed* HARD CHROMIUM ELECTROPLATING TANKS[1]		
***Existing* Affected Sources…**		***New* Affected Sources[2]**
…at a *Large* Facility (max cumulative potential rectifier capacity ≥ 60 million amp-hr/year)	**…at a *Small* Facility**	
Concentration of total chromium in the exhaust gas stream discharged to the atmosphere from all enclosed hard chromium electroplating tanks at the facility **shall not exceed 0.011 mg/dscm** of ventilation air (4.8×10^{-6} gr/dscf). **Maximum concentration:** _____;	**Concentration of total chromium** in the exhaust gas stream discharged to the atmosphere from all enclosed hard chromium electroplating tanks at the facility **shall not exceed 0.015 mg/dscm** of ventilation air (6.6×10^{-6} gr/dscf). **Maximum concentration:** _____;	Concentration of total chromium in the exhaust gas stream discharged to the atmosphere from all enclosed hard chromium electroplating tanks at the facility **shall not exceed 0.006 mg/dscm** of ventilation air (2.6×10^{-6} gr/dscf). **Maximum concentration:** _____;
or	**or**	**or**
If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Maximum surface tension:** _____;	If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Maximum surface tension:** _____;	If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Maximum surface tension:** _____;
or	**or**	**or**
The **mass rate of total chromium** in the exhaust gas stream discharged to the atmosphere from all enclosed hard chromium electroplating tanks at the facility shall not exceed the **maximum *allowable* mass emission rate** calculated using **40 CFR 63.344(f) equation 9**: **MAMER = ETSA x K x 0.011 mg/dscm** **=** _____ **mg/dscm** Where: **MAMER** = the **alternative emission rate** for enclosed hard chromium electroplating tanks in mg/hr: _____ **mg/hr** **ETSA** = the hard chromium electroplating tank surface area in square feet (ft^2): _____ **ft^2** **K** = a conversion factor, 425 dscm/(ft^2 × hr). **Maximum *actual* emission rate:** _____ **mg/dscm**	The **mass rate of total chromium** in the exhaust gas stream discharged to the atmosphere from all enclosed hard chromium electroplating tanks at the facility shall not exceed the **maximum *allowable* mass emission rate** calculated using **40 CFR 63.344(f) equation 10**: **MAMER = ETSA x K x 0.015 mg/dscm** **=** _____ **mg/dscm** Where: **MAMER** = the **alternative emission rate** for enclosed hard chromium electroplating tanks in mg/hr: _____ **mg/hr** **ETSA** = the hard chromium electroplating tank surface area in square feet (ft^2): _____ **ft^2** **K** = a conversion factor, 425 dscm/(ft^2 × hr). **Maximum *actual* emission rate:** _____ **mg/dscm**	The **mass rate of total chromium** in the exhaust gas stream discharged to the atmosphere from all enclosed hard chromium electroplating tanks at the facility shall not exceed the **maximum *allowable* mass emission rate** calculated using **40 CFR 63.344(f) equation 11**: **MAMER = ETSA x K x 0.006 mg/dscm** **=** _____ **mg/dscm** Where: **MAMER** = the **alternative emission rate** for enclosed hard chromium electroplating tanks in mg/hr: _____ **mg/hr** **ETSA** = the hard chromium electroplating tank surface area in square feet (ft^2): _____ **ft^2** **K** = a conversion factor, 425 dscm/(ft^2 × hr). **Maximum *actual* emission rate:** _____ **mg/dscm**
Use of PFOS-based fume suppressants[3] is **prohibited**. **Have any been used? Yes ☐ No ☐**	Use of PFOS-based fume suppressants[3] is **prohibited**. **Have any been used? Yes ☐ No ☐**	Use of PFOS-based fume suppressants[3] is **prohibited**. **Have any been used? Yes ☐ No ☐**

DECORATIVE CHROMIUM ELECTROPLATING TANKS and CHROMIUM ANODIZING TANKS

- **Decorative Chromium Electroplating Tanks[4] Using a Chromic Acid Bath[5];**
- **Chromium Anodizing Tanks[6];**
- **Decorative Chromium Electroplating Tanks using a Trivalent Chromium Bath[7] *that does not incorporate* a Wetting Agent[8] that is an Ingredient in the Trivalent Chromium Bath Components purchased as a Package; and**
- **Decorative Chromium Electroplating Tanks[4] using a Trivalent Chromium[7] Bath *that incorporates* a Wetting Agent[8] that is an Ingredient in the Trivalent Chromium Bath Components purchased as a Package**

[3] ***Perfluorooctyl sulfonate (PFOS)-based fume suppressant*** means a fume suppressant that contains 1 percent or greater PFOS by weight. Use of a PFOS-based fume suppressant is prohibited after September 21, 2015.

[4] ***Chromium electroplating tank*** means the receptacle or container along with the following internal and external components needed for chromium electroplating: rectifiers; anodes; heat exchanger equipment; circulation pumps; and air agitation systems. ***Decorative chromium electroplating*** means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance.

[5] ***Chromic Acid*** means the common name for chromium anhydride (CrO_3).

[6] ***Chromium anodizing tank*** means the receptacle or container along with the following accompanying internal and external components needed for chromium anodizing: rectifiers fitted with controls to allow for voltage adjustments, heat exchanger equipment, circulation pumps, and air agitation systems.

[7] ***Trivalent Chromium*** means the form of chromium in a valence state of +3.

[8] ***Wetting Agent*** means the type of commercially available chemical fume suppressant that materially reduces the surface tension of a liquid. **Use of (PFOS)-based fume suppressants[3] is prohibited.**

Tank ID	*Date of Purchase*	*Date of Latest Reconstruction (if any)*	*Type of Control Device(s)/ Technique(s)**	*Date(s) of Installation of Control Device(s)/ Technique(s)*

***Control Device Types/Techniques:**	PBS	Packed-bed scrubber
	CMP	Composite mesh-pad system
	PBS/CMP	Packed-bed scrubber and composite mesh pad system
	FS	Fume suppressant
	WA	Wetting agent
	FS/WA	Fume suppressant with wetting agent
	FBME	Fiber-bed mist eliminator
	OTHER	(Approved by the Administrator):

Requirements for

- **Decorative Chromium Electroplating Tanks[4] Using a Chromic Acid[5] Bath; and**
- **Chromium Anodizing Tanks[6]; and**
- **Decorative Chromium Electroplating Tanks using a Trivalent Chromium[7] Bath that *does not incorporate* a Wetting Agent[8] that is an Ingredient in the Trivalent Chromium Bath Components purchased as a Package**

***Existing* Affected Sources**	***New* Affected Sources[2]**
Concentration of total chromium in the exhaust gas stream discharged to the atmosphere **shall not exceed 0.007 mg/dscm** (3.1×10^{-6} gr/dscf) for all existing decorative chromium electroplating tanks using a chromic acid bath and all existing chromium anodizing tanks. **Actual maximum concentration:** ____; **or** If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Actual maximum surface tension:** ____	**Concentration of total chromium** in the exhaust gas stream discharged to the atmosphere **shall not exceed 0.006 mg/dscm** (2.6×10^{-6} gr/dscf) for all new or reconstructed decorative chromium electroplating tanks using a chromic acid bath and all new or reconstructed chromium anodizing tanks. **Actual maximum concentration:** ____; **or** If a chemical fume suppressant containing a wetting agent is used, the **surface tension** of the electroplating or anodizing bath contained within the affected tank: ☐ **shall not exceed 40 dynes/cm** (2.8×10^{-3} lbf/ft) as measured by a **stalagmometer**; or ☐ **shall not exceed 33 dynes/cm** (2.3×10^{-3} lbf/ft) as measured by a **tensiometer**; at any time during tank operation. **Actual maximum surface tension:** ____
Using a **reducing agent** to change the form of chromium from *hexavalent* to *trivalent* to meet the requirements for chromic acid baths is prohibited. Have any reducing agents been used? **Yes** ☐ **No** ☐	Using a **reducing agent** to change the form of chromium from *hexavalent* to *trivalent* to meet the requirements for chromic acid baths is prohibited. Have any reducing agents been used? **Yes** ☐ **No** ☐
Use of **PFOS**-based fume suppressants[3] is **prohibited**. **Have any been used? Yes** ☐ **No** ☐	Use of **PFOS**-based fume suppressants[3] is **prohibited**. **Have any been used? Yes** ☐ **No** ☐

[3] ***Perfluorooctyl sulfonate (PFOS)-based fume suppressant*** means a fume suppressant that contains 1 percent or greater PFOS by weight. Use of a PFOS-based fume suppressant is prohibited after September 21, 2015.

[4] ***Chromium electroplating tank*** means the receptacle or container along with the following internal and external components needed for chromium electroplating: rectifiers; anodes; heat exchanger equipment; circulation pumps; and air agitation systems. ***Decorative chromium electroplating*** means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance.

[5] ***Chromic Acid*** means the common name for chromium anhydride (CrO_3).

[6] ***Chromium anodizing tank*** means the receptacle or container along with the following accompanying internal and external components needed for chromium anodizing: rectifiers fitted with controls to allow for voltage adjustments, heat exchanger equipment, circulation pumps, and air agitation systems.

[7] ***Trivalent Chromium*** means the form of chromium in a valence state of +3.

[8] ***Wetting Agent*** means the type of commercially available chemical fume suppressant that materially reduces the surface tension of a liquid. Use of a PFOS-based fume suppressant[3] is prohibited after September 21, 2015.

Requirements for

DECORATIVE CHROMIUM ELECTROPLATING TANKS[4] USING A TRIVALENT CHROMIUM[7] BATH *THAT INCORPORATES* A WETTING AGENT[8] THAT IS AN INGREDIENT IN THE TRIVALENT CHROMIUM BATH COMPONENTS PURCHASED AS A PACKAGE

For all affected sources, the owner or operator shall maintain records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components.

Are records maintained? Yes ☐ No ☐. If answer is "No", explain:

Wetting agent(s) listed as a component of the bath(s) being used:

Use of **PFOS**-based fume suppressants[3] is **prohibited**. **Have any been used? Yes ☐ No ☐**

[3] ***Perfluorooctyl sulfonate (PFOS)-based fume suppressant*** means a fume suppressant that contains 1 percent or greater PFOS by weight. Use of a PFOS-based fume suppressant is prohibited after September 21, 2015.

[4] ***Chromium electroplating tank*** means the receptacle or container along with the following internal and external components needed for chromium electroplating: rectifiers; anodes; heat exchanger equipment; circulation pumps; and air agitation systems. ***Decorative chromium electroplating*** means the process by which a thin layer of chromium (typically 0.003 to 2.5 microns) is electrodeposited on a base metal, plastic, or undercoating to provide a bright surface with wear and tarnish resistance.

[7] ***Trivalent Chromium*** means the form of chromium in a valence state of +3.

[8] ***Wetting Agent*** means the type of commercially available chemical fume suppressant that materially reduces the surface tension of a liquid. Use of a PFOS-based fume suppressant[3] is prohibited after September 21, 2015.

MONITORING TO DETERMINE CONTINUOUS COMPLIANCE

FOR ALL AFFECTED CHROMIUM ELECTROPLATING AND ANODIZING TANKS (EXCEPT DECORATIVE CHROMIUM ELECTROPLATING TANKS USING A TRIVALENT CHROMIUM BATH *THAT INCORPORATES* A WETTING AGENT THAT IS AN INGREDIENT IN THE TRIVALENT CHROMIUM BATH COMPONENTS PURCHASED AS A PACKAGE)

Is the required monitoring, as listed below, performed? Yes ☐ No ☐				
Is the required monitoring, as listed below, performed by a continuous monitoring system? Yes ☐ No ☐				
Are the following applicable monitoring requirements complied with? Yes ☐ No ☐				
Control technique	**Required Monitoring**	**Yes**	**No**	**N/A**
Composite mesh-pad (CMP) system	Measured Daily or by Continuous Monitoring System: Pressure drop across the system within ±2 inches of water column of the pressure drop value (_____ inches of water) established during the initial performance test demonstrating compliance with the applicable emission limit? *Or* Pressure drop within the range of compliant values (_____ **to** _____ inches of water) for pressure drop established during multiple performance tests?	☐	☐	☐
Packed-bed scrubber (PBS)	Measured Daily or by Continuous Monitoring System: Pressure drop across the system within ±1 inch of water column of the pressure drop value (_____ inches of water) established during the initial performance test demonstrating compliance with the applicable emission limit, **and** scrubber system operating with ±10 percent of the velocity pressure value (_____) at the inlet of the control device, established during the initial performance test? *Or* Pressure drop within the range of compliant values (_____ **to** _____ inches of water) for pressure drop established during multiple performance tests, **and** scrubber system operating within the range of compliant velocity pressure values (_____ **to** _____) established during multiple performance tests?	☐	☐	☐
PBS/CMP system	Measured Daily or by Continuous Monitoring System: Pressure drop across the system within ±2 inches of water column of the pressure drop value (_____ inches of water) established during the initial performance test demonstrating compliance with the applicable emission limit? *Or* Pressure drop within the range of compliant values (_____ **to** _____ inches of water) for pressure drop established during multiple performance tests?	☐	☐	☐

Control technique	Required Monitoring (continued)	Yes	No	N/A
Fiber-bed mist eliminator	Measured Daily or by Continuous Monitoring System: Fiber-bed mist eliminator, and the control device installed upstream of the fiber bed to prevent plugging, operated within ±1inch of water column of the pressure drop value (inches of water) established during the initial performance test demonstrating compliance with the applicable emission limit? Or Fiber-bed mist eliminator, and the control device installed upstream of the fiber bed to prevent plugging, operated within the range of compliant values (**to** inches of water) for pressure drop established during multiple performance tests?	☐	☐	☐
Wetting agent-type or combination wetting agent-type/foam blanket fume suppressants	Measure surface tension to make sure it is less than or equal to: • the surface tension measured during the performance test (dynes/cm); or • 40 dynes/cm, as measured by stalagmometer; or • 33 dynes/cm, as measure by tensiometer; according to the following schedule? (A) The surface tension shall be measured once every 4 hours during operation of the tank with a stalagmometer or a tensiometer as specified in Method 306B, appendix A of this part. (B) The time between monitoring can be increased if there have been no exceedances. The surface tension shall be measured once every 4 hours of tank operation for the first 40 hours of tank operation after the compliance date. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 8 hours of tank operation. Once there are no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs. The minimum frequency of monitoring allowed by this subpart is once every 40 hours of tank operation. (C) Once an exceedance occurs as indicated through surface tension monitoring, the original monitoring schedule of once every 4 hours must be resumed. A subsequent decrease in frequency shall follow the schedule laid out in paragraph (B). Once an exceedance does not occur for 40 hours of tank operation, monitoring can occur once every 8 hours of tank operation. Once an exceedance does not occur for 40 hours of tank operation on this schedule, monitoring can occur once every 40 hours of tank operation. Once a bath solution is drained from the affected tank and a new solution added, the original monitoring schedule of once every 4 hours must be resumed, with a decrease in monitoring frequency allowed following the procedures of paragraphs (B) and (C).	☐	☐	☐
Foam blanket-type fume suppressants	Measure foam thickness, with same frequency as schedule (A), (B), (C) above, to confirm foam thickness greater than or equal to foam thickness established during performance test inch(s), or 1 inch?	☐	☐	☐
Fume suppressant/ add-on control device	Applicable monitoring requirements for the applicable control techniques list above?	☐	☐	☐
Use of an alternative monitoring method	Alternative monitoring method (as approved by Administrator)?	☐	☐	☐

OPERATION AND MAINTENANCE REQUIREMENTS

(Table 1 to 40 CFR 63.342 – Summary of Operation and Maintenance Practices)

FOR ALL AFFECTED CHROMIUM ELECTROPLATING AND ANODIZING TANKS

(EXCEPT DECORATIVE CHROMIUM ELECTROPLATING TANKS USING A TRIVALENT CHROMIUM BATH *THAT INCORPORATES* A WETTING AGENT THAT IS AN INGREDIENT IN THE TRIVALENT CHROMIUM BATH COMPONENTS PURCHASED AS A PACKAGE)

Is an operation and maintenance plan, meeting the requirements of 40 CFR 63.342(f), kept on site? Yes ☐ No ☐				
Are the following applicable operation and maintenance practices complied with? Yes ☐ No ☐				
Control technique	**Operation and maintenance practices**	**Yes**	**No**	**N/A**
Composite mesh-pad (CMP) system	1. Quarterly visual inspection of device to ensure there is proper drainage, no chronic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device?	☐	☐	☐
	2. Quarterly visual inspection of back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist?	☐	☐	☐
	3. Quarterly visual inspection of ductwork from tank to the control device to ensure there are no leaks?	☐	☐	☐
	4. Perform washdown of the composite mesh-pads in accordance with manufacturers recommendations?	☐	☐	☐
Packed-bed scrubber (PBS)	1. Quarterly visual inspection of device to ensure there is proper drainage, no chromic acid buildup on the packed beds, and no evidence of chemical attack on the structural integrity of the device?	☐	☐	☐
	2. Quarterly visual inspection of back portion of the chevron blade mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist?	☐	☐	☐
	3. Quarterly visual inspection of ductwork from tank to the control device to ensure there are no leaks?	☐	☐	☐
	4. Fresh makeup water added to the top of the packed bed whenever makeup water is needed? [a] [b]	☐	☐	☐
PBS/CMP system	1. Quarterly visual inspection of device to ensure there is proper drainage, no chronic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device?	☐	☐	☐
	2. Quarterly visual inspection of back portion of the mesh pad closest to the fan to ensure there is no breakthrough of chromic acid mist?	☐	☐	☐
	3. Quarterly visual inspection of ductwork from tank to the control device to ensure there are no leaks?	☐	☐	☐
	4. Perform washdown of the composite mesh-pads in accordance with manufacturers recommendations?	☐	☐	☐
Fiber-bed mist eliminator [c]	1. Quarterly visual inspection of fiber-bed unit and prefiltering device to ensure there is proper drainage, no chromic acid buildup in the units, and no evidence of chemical attack on the structural integrity of the devices?	☐	☐	☐
	2. Quarterly visual inspection of ductwork from tank or tanks to the control device to ensure there are no leaks?	☐	☐	☐
	3. Perform washdown of fiber elements in accordance with manufacturers recommendations?	☐	☐	☐

Control technique	Operation and maintenance practices (continued)	Yes	No	N/A
Other air pollution control device (APCD) not listed in rule	Proposed by the source for approval by the Administrator. Any proposed and approved?	☐	☐	☐
Monitoring Equipment				
Pitot tube	Quarterly backflushed pitot tube with water, or removed from the duct and rinsed with fresh water and then replaced in the duct and rotated 180 degrees to ensure that the same zero reading is obtained?	☐	☐	☐
	Quarterly checked pitot tube ends for damage? Replaced pitot tube if cracked or fatigued?	☐	☐	☐
Stalagmometer	Followed manufacturers recommended operation and maintenance practices?	☐	☐	☐

[a] If greater than 50 percent of the scrubber water is drained (e.g., for maintenance purposes), makeup water may be added to the scrubber basin.

[b] For horizontal-flow scrubbers, top is defined as the section of the unit directly above the packing media such that the makeup water would flow perpendicular to the air flow through the packing. For vertical-flow units, the top is defined as the area downstream of the packing material such that the makeup water would flow countercurrent to the air flow through the unit.

[c] Work practice standards for the control device installed upstream of the fiber-bed mist eliminator to prevent plugging do not apply as long as the work practice standards for the fiber-bed unit are followed.

HOUSEKEEPING REQUIREMENTS

FOR ALL AFFECTED CHROMIUM ELECTROPLATING AND ANODIZING TANKS

Are all of the following applicable housekeeping practices complied with? Yes ☐ No ☐					
Housekeeping Practices			**Compliance?**		
For	**Owner/Operator must:**	**At this minimum frequency**	**Yes**	**No**	**N/A**
1. Any substance used in an affected chromium electroplating or chromium anodizing tank that contains hexavalent chromium	(a) Store the substance in a closed container in an enclosed storage area or building; AND (b) Use a closed container when transporting the substance from the enclosed storage area.	At all times, except when transferring the substance to and from the container. Whenever transporting substance, except when transferring the substance to and from the container.	☐	☐	☐
2. Each affected tank, to minimize spills of bath solution that result from dragout. Note: this measure does not require the return of contaminated bath solution to the tank. This requirement applies only as the parts are removed from the tank. Once away from the tank area, any spilled solution must be handled in accordance with Item 4 of these housekeeping measures.	(a) Install drip trays that collect and return to the tank any bath solution that drips or drains from parts as the parts are removed from the tank; OR (b) Contain and return to the tank any bath solution that drains or drips from parts as the parts are removed from the tank; OR (c) Collect and treat in an onsite wastewater treatment plant any bath solution that drains or drips from parts as the parts are removed from the tank.	Prior to operating the tank. Whenever removing parts from an affected tank. Whenever removing parts from an affected tank.	☐	☐	
3. Each spraying operation for removing excess chromic acid from parts removed from, and occurring over, an affected tank	Install a splash guard to minimize overspray during spraying operations and to ensure that any hexavalent chromium laden liquid captured by the splash guard is returned to the affected chromium electroplating or anodizing tank.	Prior to any such spraying operation.	☐	☒	☐
4. Each operation that involves the handling or use of any substance used in an affected chromium electroplating or chromium anodizing tank that contains hexavalent chromium	Begin cleanup, or otherwise contain, all spills of the substance. Note: substances that fall or flow into drip trays, pans, sumps, or other containment areas are not considered spills.	Within 1 hour of the spill.	☐	☐	☐

Housekeeping Practices (continued)			Compliance?		
For	**Owner/Operator must:**	**At this minimum frequency**	**Yes**	**No**	**N/A**
5. Surfaces within the enclosed storage area, open floor area, walkways around affected tanks contaminated with hexavalent chromium from an affected chromium electroplating or chromium anodizing tank	(a) Clean the surfaces using one or more of the following methods: HEPA vacuuming; Hand-wiping with a damp cloth; Wet mopping; Hose down or rinse with potable water that is collected in a wastewater collection system; Other cleaning method approved by the permitting authority; OR (b) Apply a non-toxic chemical dust suppressant to the surfaces	At least once every 7 days if one or more chromium electroplating or chromium anodizing tanks were used, or at least after every 40 hours of operating time of one or more affection chromium electroplating or chromium anodizing tank, whichever is later. According to manufacturer's recommendations.	☐	☐	☐
6. All buffing, grinding, or polishing operations that are located in the same room as chromium electroplating or chromium anodizing operations	Separate the operation from any affected electroplating or anodizing operation by installing a physical barrier; the barrier may take the form of plastic strip curtains	Prior to beginning the buffing, grinding, or polishing operation.	☐	☐	☐
7. All chromium or chromium-containing wastes generated from housekeeping activities	Store, dispose, recover, or recycle the wastes using practices that do not lead to fugitive dust and in accordance with hazardous waste requirements	At all times.	☐	☐	

RECORDKEEPING REQUIREMENTS

FOR ALL AFFECTED CHROMIUM ELECTROPLATING AND ANODIZING TANKS

Are all of the following applicable recordkeeping requirements complied with? ☐ Yes ☐ No			
Recordkeeping Requirements	**Compliance?**		
	Yes	**No**	**N/A**
(1) Inspection records for the add-on air pollution control device, if such a device is used, and monitoring equipment, to document that the inspection and maintenance required by the work practice standards of 40 CFR 63.342(f), Operation and maintenance practices, and Table 1 of 40 CFR 63.342, Summary of Operation and Maintenance Practices, have taken place. The record can take the form of a checklist and should identify the device inspected, the date of inspection, a brief description of the working condition of the device during the inspection, and any actions taken to correct deficiencies found during the inspection.	☐	☐	☐
(2) Records of all maintenance performed on the affected source, the add-on air pollution control device, and monitoring equipment, except routine housekeeping practices;	☐	☐	
(3) Records of the occurrence, duration, and cause (if known) of each malfunction of process, add-on air pollution control, and monitoring equipment;	☐	☐	☐
(4) Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.342(a)(1), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation;	☐	☐	☐
(5) Other records, which may take the form of checklists, necessary to demonstrate consistency with the provisions of the operation and maintenance plan required by 40 CFR 63.342(f)(3);	☐	☐	☐
(6) Test reports documenting results of all performance tests;	☐	☐	☐
(7) All measurements as may be necessary to determine the conditions of performance tests, including measurements necessary to determine compliance with the special compliance procedures of 40 CFR 63.344(e);	☐	☐	☐
(8) Records of monitoring data required by 40 CFR 63.343(c) that are used to demonstrate compliance with the standard including the date and time the data are collected;	☐	☐	☐
(9) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, add-on air pollution control, or monitoring equipment;	☐	☐	☐
(10) The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during periods *other than* malfunction of the process, add-on air pollution control, or monitoring equipment;	☐	☐	☐
(11) The total process operating time of the affected source during the reporting period;	☐	☐	
(12) Records of the actual cumulative rectifier capacity of hard chromium electroplating tanks at a facility expended during each month of the reporting period, and the total capacity expended to date for a reporting period, if the owner or operator is using the actual cumulative rectifier capacity to determine facility size in accordance with 40 CFR 63.342(c)(2);	☐	☐	
(13) For sources using fume suppressants to comply with the standards, records of the date and time that fume suppressants are added to the electroplating or anodizing bath and records of the fume suppressant manufacturer and product name;	☐	☐	☐
(14) For sources complying with 40 CFR 63.342(e), records of the bath components purchased, with the wetting agent clearly identified as a bath constituent contained in one of the components;	☐	☐	☐
(15) Any information demonstrating whether a source is meeting the requirements for a waiver of recordkeeping or reporting requirements, if the source has been granted a waiver under 40 CFR 63.10(f); and	☐	☐	☐
(16) All documentation supporting the notifications and reports required by 40 CFR 63.9, 63.10, and 63.347.	☐	☐	

For rule cites and further information, see 40 CFR 63 Subpart N, National Emission Standards for Hazardous Air Pollutants for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks and 40 CFR 63 Subpart A, National Emission Standards for Hazardous Air Pollutants – General Provisions.