

New & Revised Requirements for Chrome Electroplating NESHAP

National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63 Subpart N

The United States Environmental Protection Agency (USEPA) revised the National Emission Standards for Hazardous Air Pollutants (NESHAP) for hard and decorative chromium electroplating and chromium anodizing tanks, 40 CFR Part 63, subpart N on September 19, 2012. Compliance with the new requirements was phased in starting in March 19, of 2013 for housekeeping requirements, and September 19, 2012 for the revised emission limitations and surface tension limits.

New Requirements Include:

- tighter chrome limits and new housekeeping requirements;
- new and modified requirements for monitoring,
- new and modified recordkeeping and reporting and,
- a ban on the use of perfluorooctane sulfonic acid (PFOS)-based fume suppressants, and
- testing unless a previous test shows compliance with the current limits.

The full text of the new rules for Subpart N can be found at: www.epa.gov/ttn/atw/chrome/chromepeg.html

Compliance Dates

An existing affected source is required to be in compliance with applicable emission limitations no later than September 19, 2014; a new affected source with initial startup after September 19, 2012 must be in compliance upon startup.

- Existing affected source means an affected hard chromium electroplating tank, decorative chromium electroplating tank, or chromium anodizing tank, the construction or reconstruction of which commenced on or before February 8, 2012;
- New source means an affected hard chromium electroplating tank, decorative chromium electroplating tank, or chromium anodizing tank, the construction or reconstruction of which commenced after February 8, 2012.

An **area source facility** that commenced construction or reconstruction after February 8, 2012, that increase actual or potential emissions of hazardous air pollutants (HAP) such that the area source becomes a major source of HAP, must comply immediately with the provisions for major sources upon becoming a major source.

NOTE: An area source is a source with actual or potential emissions of 10 tons of a single HAP, or 25 tons of a combination of HAP.

Revised Emission Limits and Surface Tension Limits

Surface Tension Limits

If a chemical fume suppressant containing a wetting agent is used in an electroplating or anodizing bath to comply, the surface tension of the bath must not be allowed at any time during tank operation, to exceed:

- 40 dynes per centimeter (dynes/cm) (2.8×10^{-3} pound-force per foot (lbf/ft)), as measured by a stalagmometer, or
- 33 dynes/cm (2.8×10^{-3} pound-force per foot (lbf/ft)), as measured by a tensiometer

The new rule requires:

- the phase-out **by September 21, 2015** the use of perfluorooctane sulfonic acid (PFOS)-based fume suppressants in any hard chromium electroplating tank, decorative chromium electroplating tank, chromium anodizing tank, or in a decorative chromium electroplating tank that uses a trivalent chromium bath with a wetting agent as an ingredient;
- the owner or operator of an existing, new, or reconstructed decorative chromium electroplating tank that had been using a trivalent chromium bath with a wetting agent and ceases using this type of bath to submit a report to Illinois EPA within 30 days of a change to the trivalent chromium process. The report must address the requirements in §63.347(i)(3), and the owner or operator must demonstrate compliance if a different emission limitation applies, within the timeframe specified in §63.343(a)(7).

Table 1 New Emission Limits

Type of Tank	Emission Limitations ^a	
	<i>Hard Chromium Plating Tanks</i>	
	Small ^b	Large ^c
All existing open surface and enclosed tanks	0.015 mg/dscm (6.6 x 10 ⁻⁶ gr/dscf)	0.011 mg/dscm (4.8 x 10 ⁻⁶ gr/dscf)
All new open surface and enclosed tanks	0.006 mg/dscm (2.6 x 10 ⁻⁶ gr/dscf)	0.006 mg/dscm (2.6 x 10 ⁻⁶ gr/dscf)
<i>Alternative Compliance Option: Mass Emission Rate Standard</i>		
All existing enclosed tanks	The mass rate of total chromium in the exhaust gas stream must be less the maximum allowable mass emission rate as determined by using calculation procedure in §63.344(f)(1)(i) or §63.344(f)(1)(ii), as applicable	
All new enclosed tanks	The mass rate of total chromium in the exhaust gas stream must be less the maximum allowable mass emission rate as determined by using calculation procedure in 40 CFR 63.344(f)(1)(iii)	
<i>Decorative Chromium Plating Tanks Using a Chromium Acid Bath</i>		
All existing decorative chromium electroplating tanks using chromic acid bath and all existing chromium anodizing tanks	0.007 mg/dscm (3.1 x 10 ⁻⁶ gr/dscf)	
All new or reconstructed decorative chromium electroplating tanks using chromic acid bath and all new or reconstructed chromium anodizing tanks	0.006 mg/dscm (2.6 x 10 ⁻⁶ gr/dscf)	
<i>Decorative Chromium Plating Tanks Using a Trivalent Chromium Bath with a Wetting Agent ^d</i>		
All existing, new or reconstructed tanks	Only subject to recordkeeping and reporting requirements	
<i>Chromium Anodizing Tanks</i>		
All existing tanks	0.007 mg/dscm (2.6 x 10 ⁻⁶ gr/dscf)	
All new or reconstructed tanks	0.006 mg/dscm (2.6 x 10 ⁻⁶ gr/dscf)	
^a mg/dscm = milligrams per dry standard cubic meter of exhaust air		
gr/dscf = grains per dry standard cubic feet of exhaust air		
^b Small, hard chromium electroplating facility means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity less than 60 million ampere-hours per year (amp-hr/yr).		
^c Large, hard chromium electroplating facility means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity greater or equal to 60 million amp-hr/yr.		
^d The wetting agent must be an ingredient in the trivalent chromium bath components purchased as a package.		

Periods of Malfunction & Affirmative Defense

- USEPA added a provision to provide an affirmative defense against civil penalties for violations of emission standards caused by malfunctions, as well as criteria for establishing the affirmative defense, which is the same affirmative defense provision USEPA has proposed or promulgated in several other recent NESHAP rules.

On April 18, 2014 the U.S. Court of Appeals for the District of Columbia Circuit in a decision in *Natural Resources Defense Council v. EPA*, vacated the affirmative defense provision in the Portland Cement Manufacturing NESHAP. Although the provision has not been removed from the Code of Federal Register, affirmative defense is no longer available for an owner or operator of an affected source to assert against a claim for civil penalties for violations of emission standards caused by a malfunction.

Housekeeping Practices

USEPA made several revisions to housekeeping requirements to help further reduce and minimize fugitive emissions of chromium compounds from affected facilities. The changes made include:

- Removing routine housekeeping measures from recordkeeping;
- Adding that cleanup must be initiated within one hour of a spill; and
- Allowing facilities to collect dragout using other methods when drip trays are practical

Table 2 to §63.342 – Housekeeping Practices

For	You must:	At this minimum frequency
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	At all times, except when transferring the substance to and from the container.
	(b) Use a closed container when transporting the substance from the enclosed storage area.	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	Prior to operating the tank.
	(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	Whenever removing parts from an affected tank.
	(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.	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	Begin clean up, or otherwise contain, all spills of the substance.	
	Note: substances that fall or flow into	Within 1 hour of the spill.

electroplating or chromium anodizing tank that contains hexavalent chromium	drip trays, pans, sumps, or other containment areas are not considered spills.	
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: (i) HEPA vacuuming; (ii) Hand-wiping with a damp cloth; (iii) Wet mopping; (iv) Hose down or rinse with potable water that is collected in a wastewater collection system; (v) Other cleaning method approved by the permitting authority; OR	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 affected chromium electroplating or chromium anodizing tank, whichever is later
	(b) Apply a non-toxic chemical dust suppressant to the surfaces.	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.

Performance Testing & Monitoring

Facilities must demonstrate compliance with the new limits by conducting a performance or stack test. USEPA revised the compliance provisions for multiple sources controlled by a common add-on air pollution control device, clarified that testing can be performed by either Method 306 or Method 306A.

Facilities may use a previous performance test to demonstrate compliance with the new emission limits, provided that:

- the test was conducted after January 25, 1995,
- the source is using the same emission controls that were used during the compliance test,
- the source was operating under conditions that are representative of the conditions under which the source was operating during the compliance test, and
- the test was based on approval from a permitting authority.

If a chemical fume suppressant containing a wetting agent is used in an electroplating or anodizing bath to comply, the owner or operator is required to establish as the site-specific operating parameter the surface tension of the bath using Method 306B, setting the maximum surface tension value that corresponds to compliance with applicable emission limitation. In lieu of establishing site-specific maximum surface tension parameter, the owner or operator may accept either of the following values as the surface tension value that corresponds to compliance with applicable emission limitation:

- 40 dynes/cm, if measured by stalagmometer,
- 33 dynes/cm, if measured by tensiometer.

Note: USEPA revised Method 306B to clarify that the method also applies to hard chromium electroplating tanks, and include procedures for checking the accuracy of, and cleaning of, a stalagmometer.

Monitoring, Recordkeeping and Reporting Requirements

Recordkeeping

- Maintain records of all maintenance performed, as applicable, on the affected source, the add-on air pollution control device, and monitoring equipment, except routine housekeeping
- Maintain records of actions taken during periods of malfunction to minimize in accordance with the general duty clause (40 CFR 63.342(a)(1)), including corrective equipment to its normal or usual manner of operation
- If fume suppressants is used to comply, maintain records of the date and time that fume suppressants are to the plating bath and records of the fume suppressant manufacturer and product name

Electronic Reporting

- The final rule amendments also require owners and operators of affected facilities to submit electronic copies of required performance test reports to USEPA's WebFIRE database through an electronic emissions test report structure called the Electronic Reporting Tool (ERT). The ERT generates an electronic report which would be submitted using the Compliance and Emissions Data Reporting Interface (CEDRI). The submitted report will be transmitted through EPA's Central Data Exchange (CDX) network for storage in the WebFIRE database. The requirement to submit performance test data electronically to USEPA applies only to those performance tests conducted using test methods that are supported by the ERT. For more information go to <http://epa.gov/ttn/chief/cedri/index.html>
- The performance test results, including any associated fuel analyses required by this Chromium Electroplating NESHAP rule, must be submitted within 60 days after the date of completing the performance test.

Questions?

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**Illinois Small Business Environmental Assistance Program
(IL SBEAP) of the Department of Commerce & Economic Opportunity**

at: www.ienconnect.com/enviro

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Call the IL SBEAP Helpline at 800-252-3998