



CHROMIUM ELECTROPLATERS AND ANODIZERS

Air General Permit Registration Worksheet

The Florida Department of Environmental Protection (“Department” or “FDEP”) has established an air general permit under paragraph 62-210.310(5)(i), Florida Administrative Code (“F.A.C.”), for chromium electroplating and anodizing operations. An air general permit is an authorization by rule to construct or operate a specific type of air pollutant emitting facility. Use of such authorization by any individual facility does not require action by the Department. The terms and conditions of the air general permit are set forth in the rule, rather than in a separately issued air construction or air operation permit.

If you are the owner or operator of an eligible facility comprising one or more chromium electroplating and anodizing operations, you may register to use the air general permit under paragraph 62-210.310(5)(i), F.A.C., by following the general procedures and conditions given under subsections 62-210.310(2) and 62-210.310(3), F.A.C.

To register, you may use the Department’s new online Air General Permit Electronic Registration Submittal system (<https://floridadep.gov/air/permitting-compliance/content/air-general-permits>), or complete this registration worksheet and submit it to the address below, along with the air general permit registration processing fee (\$100.00), payable to FDEP.

Department of Environmental Protection
Attn: FDEP Air General Permits
2600 Blair Stone Road, MS 5500
Tallahassee, Florida, 32399-2400

If you properly register to use an air general permit, and are not denied use of the air general permit by the Department, you are authorized to construct and operate the facility in accordance with the general terms and conditions of Rule 62-210.310, F.A.C., and the specific terms and conditions of paragraph 62-210.310(5)(i), F.A.C. Your facility may vary, so be sure your registration describes the operations at your facility in sufficient detail to demonstrate the facility’s eligibility for use of the air general permit and to provide a basis for tracking any future equipment or process changes. Your registration should describe all air pollutant-emitting processes and equipment at the facility, and it should identify any air pollution control measures or equipment used.

The rules do not require any specific format for the registration. This worksheet, however, has been designed to assist owners and operators. Using it as a template for a general permit registration will help ensure that all necessary information is submitted.

Additional information can be found on the Department’s air general permit program website listed above or by calling the Small Business Environmental Assistance Program Hotline at 1-800-722-7457.

**CHROMIUM ELECTROPLATERS AND ANODIZERS
AIR GENERAL PERMIT REGISTRATION WORKSHEET**

Facility Identification Number (For existing permitted facilities, enter the seven-digit facility ID number. Please include any leading zeros necessary to reach seven digits.)

Registration Type

Check one of the seven options below:

INITIAL REGISTRATION - Notification of intent to:

Construct and operate a proposed new facility.

Operate an existing permitted facility not currently using an air general permit (e.g., a facility proposing to go from an air operation permit to an air general permit). If the facility currently holds one or more air operation permits, such permit(s) must be surrendered by the owner or operator upon the effective date of this air general permit. (See "Surrender of Existing Air Operation Permit(s)" below.)

Operate an existing facility not currently permitted or using an air general permit.

RE-REGISTRATION (for facilities currently using an air general permit) - Notification of intent to:

Continue operating the facility after expiration of the current term of air general permit use.

Continue operating the facility after a change of ownership.

Make an equipment change requiring re-registration pursuant to paragraph 62-210.310(2)(e), F.A.C.

Any other change not considered an administrative correction under paragraph 62-210.310(2)(d), F.A.C.

Surrender of Existing Air Operation Permit(s) - For Initial Registrations, if Applicable

All existing air operation permits for this facility are hereby surrendered upon the effective date of this air general permit; specifically permit number(s):

General Facility Information

Facility Owner/Company Name (Name of corporation, agency, or individual owner who or which owns, leases, operates, controls, or supervises the facility.)

Site Name (Name, if any, of the facility site; e.g., Plant A, Metropolis Plant, etc. If more than one facility is owned, a complete registration must be submitted for each.)

Facility Location (Physical location of the facility, not necessarily the mailing address.)

Street Address: _____

City: _____ County: _____ Zip Code: _____

Facility Start-Up Date (New facilities only)

If existing facility, check this Not Applicable box:

If new facility, select or type in the estimated start-up date:

Authorized Representative

The Authorized Representative is an individual who owns the facility or is authorized to make decisions or sign documents on behalf of the owner. This is typically the person to whom the Department will direct correspondence related to the facility.

Name: _____

Position Title: _____

Mailing Address:

Organization/Firm Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Contact Details

Office Phone: _____

Cell Phone: _____

E-mail: _____

Facility Contact

The Facility Contact is typically a person who works at or closely with the facility, such as the plant manager or environmental coordinator. The Facility Contact is the individual that the Department may contact directly when on-site information is needed.

Name: _____

Position Title: _____

Mailing Address:

Organization/Firm Name: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Contact Details:

Office Phone: _____

Cell Phone: _____

E-mail: _____

Facility Information

1.a. Provide the information in the table below for each hard chromium electroplating tank at the facility. Applicable standards are defined at 40 C.F.R. Part 63, Subpart N. Use the following keys to assist in completing the information.

Key for Type of Control Device

CMP = Composite Mesh-Pad

PBS = Packed-Bed Scrubber

PBSCMP = Packed-Bed Scrubber and Composite Mesh-Pad

FBME = Fiber-Bed Mist Eliminator

WA = Wetting Agent

FB = Foam Blanket

FSCD = Fume Suppressant and add-on Control Device

Key for Applicable Standard

a = 0.006 mg/dscm

b = 0.011 mg/dscm

c = 0.015 mg/dscm

d = 33 dynes/cm tanks

e = 40 dynes/cm tanks

f = alternative standard for multiple sources under common control

HARD CHROMIUM ELECTROPLATING TANKS TABLE

TANK TYPE OR IDENTIFIER →						
UNIT CLASS (Check one)	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing
OPEN SURFACE OR ENCLOSED	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed
DATE OF PURCHASE						
DATE CONTROL DEVICE INSTALLED						
TYPE OF CONTROL DEVICE (see key)						
APPLICABLE STANDARD (see key)						

Is the facility's cumulative potential rectifier capacity greater than or equal to 60 million ampere-hours per year?

Yes No

1.b. Provide the information in the table below for each decorative chromium electroplating or chromium anodizing tank at the facility. Applicable standards are defined at 40 C.F.R. Part 63, Subpart N. Use the following keys to assist in completing the information.

Key for Type of Control Device

- CMP = Composite Mesh-Pad
- PBS = Packed-Bed Scrubber
- PBSCMP = Packed-Bed Scrubber and Composite Mesh-Pad
- FBME = Fiber-Bed Mist Eliminator
- WA = Wetting Agent
- FB = Foam Blanket
- FSCD = Fume Suppressant and add-on Control Device

Key for Applicable Standard

- h = 0.006 mg/dscm
- i = 0.007 mg/dscm
- j = 33 dynes/cm
- k = 40 dynes/cm
- l = records of bath components (trivalent tanks only)
- m = alternative standard for multiple sources under common control

DECORATIVE AND ANODIZING TANKS TABLE

TANK TYPE OR IDENTIFIER →						
UNIT CLASS (Check one)	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing	<input type="checkbox"/> New or <input type="checkbox"/> Existing
OPEN SURFACE OR ENCLOSED	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed	<input type="checkbox"/> Open or <input type="checkbox"/> Enclosed
DATE OF PURCHASE						
DATE CONTROL DEVICE INSTALLED						
TYPE OF CONTROL DEVICE (see key)						
APPLICABLE STANDARD (see key)						

2. Indicate the facility's compliance demonstration method (check one):

- The facility will conduct an initial performance test
- The facility will use a wetting agent to reduce emissions and will meet the existing surface tension limit.
- For trivalent chromium bath decorative electroplating tanks only, the facility will use records of bath components.

3. After January 25, 1995, for new or reconstructed affected sources, provide the following additional information:
 - a. A description of the air pollution control technique to be used to control emissions from the affected source, such as preliminary design drawings and design capacity if an add-on air pollution control device is used; and
 - b. An estimate of emissions from the source based on engineering calculations and vendor information on control device efficiency, expressed in units consistent with the emission limits of Subpart N. Calculations of emission estimates should be in sufficient detail to permit assessment of the validity of the calculations.

Helpful Definitions

Add-on air pollution control device means equipment installed in the ventilation system of chromium electroplating and anodizing tanks for the purposes of collecting and containing chromium emissions from the tank(s).

Affirmative defense means, in the context of an enforcement proceeding, a response or a defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Air pollution control technique means any method, such as an add-on air pollution control device or a chemical fume suppressant, that is used to reduce chromium emissions from chromium electroplating and chromium anodizing tanks.

Base metal means the metal or metal alloy that comprises the workpiece.

Bath component means the trade or brand name of each component(s) in trivalent chromium plating baths. For trivalent chromium baths, the bath composition is proprietary in most cases. Therefore, the trade or brand name for each component(s) can be used; however, the chemical name of the wetting agent contained in that component must be identified.

Chemical fume suppressant means any chemical agent that reduces or suppresses fumes or mists at the surface of an electroplating or anodizing bath; another term for fume suppressant is mist suppressant.

Chromic acid means the common name for chromium anhydride (CrO₃).

Chromium anodizing means the electrolytic process by which an oxide layer is produced on the surface of a base metal for functional purposes (e.g., corrosion resistance or electrical insulation) using a chromic acid solution. In chromium anodizing, the part to be anodized acts as the anode in the electrical circuit, and the chromic acid solution, with a concentration typically ranging from 50 to 100 grams per liter (g/L), serves as the electrolyte.

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.

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.

Composite mesh-pad system means an add-on air pollution control device typically consisting of several mesh-pad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any reentrained particles not collected by the composite mesh pad.

Construction - The fabrication (on-site), erection, or installation of a chromium electroplating or anodizing unit.

Contains hexavalent chromium means, the substance consists of, or contains 0.1 percent or greater by weight, chromium trioxide, chromium (VI) oxide, chromic acid, or chromic anhydride.

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. In this process, the part(s) serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Typical current density applied during this process ranges from 540 to 2,400 Amperes per square meter (A/m²) for total plating times ranging between 0.5 to 5 minutes.

Electroplating or anodizing bath means the electrolytic solution used as the conducting medium in which the flow of current is accompanied by movement of metal ions for the purposes of electroplating metal out of the solution onto a workpiece or for oxidizing the base material.

Emission limitation means, for the purposes of this permit, the concentration of total chromium allowed to be emitted expressed in milligrams per dry standard cubic meter (mg/dscm), or the allowable surface tension expressed in dynes per centimeter (dynes/cm).

Emissions Unit - Any part or activity of a facility that emits or has the potential to emit any air pollutant.

Enclosed hard chromium electroplating tank means a chromium electroplating tank that is equipped with an enclosing hood and ventilated at half the rate or less that of an open surface tank of the same surface area.

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.

Facility means the major or area source at which chromium electroplating or chromium anodizing is performed.

Fiber-bed mist eliminator means an add-on air pollution control device that removes contaminants from a gas stream through the mechanisms of inertial impaction and Brownian diffusion. These devices are typically installed downstream of another control device, which serves to prevent plugging, and consist of one or more fiber beds. Each bed consists of a hollow cylinder formed from two concentric screens; the fiber between the screens may be fabricated from glass, ceramic plastic, or metal.

Foam blanket means the type of chemical fume suppressant that generates a layer of foam across the surface of a solution when current is applied to that solution.

Fresh water means water, such as tap water, that has not been previously used in a process operation or, if the water has been recycled from a process operation, it has been treated and meets the effluent guidelines for chromium wastewater.

Hard chromium electroplating or industrial chromium electroplating means a process by which a thick layer of chromium (typically 1.3 to 760 microns) is electrodeposited on a base material to provide a surface with functional properties such as wear resistance, a low coefficient of friction, hardness, and corrosion resistance. In this process, the part serves as the cathode in the electrolytic cell and the solution serves as the electrolyte. Hard chromium electroplating process is performed at current densities typically ranging from 1,600 to 6,500 A/m² for total plating times ranging from 20 minutes to 36 hours depending upon the desired plate thickness.

Hexavalent chromium means the form of chromium in a valence state of + 6.

Large, hard chromium electroplating facility means a facility that performs hard chromium electroplating and has a maximum cumulative potential rectifier capacity greater than or equal to 60 million ampere-hours per year (amp-hr/yr).

Major Source - Any affected source which emits or has the potential to emit 10 or more tons per year of any hazardous air pollutant or 25 or more tons per year of any combination of hazardous air pollutants.

Maximum cumulative potential rectifier capacity means the summation of the total installed rectifier capacity associated with the hard chromium electroplating tanks at a facility, expressed in amperes, multiplied by the maximum potential operating schedule of 8,400 hours per year and 0.7, which assumes that electrodes are energized 70 percent of the total operating time. The maximum potential operating schedule is based on operating 24 hours per day, 7 days per week, 50 weeks per year.

New affected 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.

Open surface hard chromium electroplating tank means a chromium electroplating tank that is ventilated at a rate consistent with good ventilation practices for open tanks.

Operating parameter value means a minimum or maximum value established for a control device or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator is in continual compliance with the applicable emission limitation or standard.

Owner or Operator - Any person or entity who or which owns, leases, operates, controls or supervises an emissions unit or facility.

Packed-bed scrubber means an add-on air pollution control device consisting of a single or double packed bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.

Perfluorooctane sulfonic acid (PFOS)-based fume suppressant means a fume suppressant that contains 1 percent or greater PFOS by weight.

Reconstruction - The replacement of a chromium electroplating or anodizing tank; or replacement of any components of a chromium electroplating or anodizing system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new system.

Research or laboratory operation means an operation whose primary purpose is for research and development of new processes and products, that is conducted under the close supervision of technically trained personnel, and that is not involved in the manufacture of products for commercial sale in commerce, except in a de minimis manner.

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 amp-hr/yr.

Stalagmometer means an instrument used to measure the surface tension of a solution by determining the mass of a drop of liquid by weighing a known number of drops or by counting the number of drops obtained from a given volume of liquid.

Surface tension means the property, due to molecular forces, that exists in the surface film of all liquids and tends to prevent liquid from spreading.

Tank operation means the time in which current and/or voltage is being applied to a chromium electroplating tank or a chromium anodizing tank.

Tensiometer means an instrument used to measure the surface tension of a solution by determining the amount of force needed to pull a ring from the liquid surface. The amount of force is proportional to the surface tension.

Trivalent chromium means the form of chromium in a valence state of + 3.

Trivalent chromium process means the process used for electrodeposition of a thin layer of chromium onto a base material using a trivalent chromium solution instead of a chromic acid solution.

Wetting Agent - A type of commercially-available chemical fume suppressant that materially reduces the surface tension of a liquid.

Year or Yearly - Any consecutive 12-month period of time.