



National Aeronautics and
Space Administration

Principal Center for Regulatory Risk Analysis and Communication

REGULATORY ALERT

Proposed Rule

National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations

This information was prepared by NASA's Principal Center for Regulatory Risk Analysis and Communication (RRAC PC). If you have further questions or need assistance with this matter, please contact Sharon Scroggins/MSFC (256-544-7932, sharon.scroggins@nasa.gov).

Introduction

The U.S. Environmental Protection Agency (EPA) published the proposed rule for the National Emission Standards for Hazardous Air Pollutants (NESHAP): Area Source Standards for Plating and Polishing Operations ("plating area source NESHAP," or "area source rule") in the *Federal Register* (FR) on 14 March 2008 ([73 FR 14126](#)). The rule would regulate metal plating and polishing operations at area sources of hazardous air pollutants (HAPs). Area sources are those sources of HAP that have the potential to emit less than 10 tons per year (tpy) of any single HAP and less than 25 tpy of any combination of HAPs.

Comments on the proposal are due to EPA by 14 April 2008. If anyone contacts EPA requesting a public hearing concerning the proposed rule by 24 March 2008, the comment deadline will be extended to 28 April 2008.

Summary of the Proposed Rule

This proposed area source rule applies to each new and existing affected area source engaged in one or more of the following operations that use or emit "plating and polishing metal HAP," which includes any compounds of cadmium, chromium, lead, manganese, and nickel [§63.11475(a)]:

- Electroplating without chromium
- Electroforming
- Electropolishing
- Electroless plating
- Non-electrolytic metal coating, such as chromate conversion coating and thermal spraying
- Mechanical polishing of finished metals and formed products after plating

If they use any compounds of the plating and polishing metal HAPs, the following types of operations at area sources would be affected by this proposed rule:

- Chemical bath tanks and associated equipment for raising and lowering parts
- Thermal spraying operations
- Dry mechanical polishing operations

Each affected source must develop and submit an initial notification and an annual certification of compliance. The certification must state that all process and pollution control equipment are being operated according to the manufacturer's specifications.

Records for the annual usage of wetting agents and fume suppressants (WAFS) must be available onsite at all times, along with the current annual certification of compliance.

Existing affected sources (sources that began construction, reconstruction, or operation before 14 March 2008) must achieve compliance with the applicable provisions of this rule no later than 2 years after the date of publication of the final rule in the *Federal Register*. New affected sources (sources that began construction, reconstruction, or operation after 14 March 2008) with initial startup dates before the date of publication of the final rule must achieve compliance no later than the date of publication of the final rule in the *Federal Register*. New affected sources with initial startup dates after the date of publication of the final rule must achieve compliance upon initial startup of the affected source.

Management and Pollution Prevention Practices

Exhibit 1 provides the management and pollution prevention practices for minimizing emissions of plating and polishing metal HAPs, as outlined in §63.11490 through §63.11500 of the proposed rule.

EXHIBIT 1
Management and Pollution Prevention Requirements

Type of Plating or Polishing Operation	Management and Pollution Prevention Practices
All Plating and Polishing Process Tanks	<p>Minimize bath agitation when removing and plating parts.</p> <p>Maximize dripping of tank solution back into bath by extending drip time when removing the tank objects and using drain boards (drip shields).</p> <p>Optimize the design of barrels, racks, and parts to minimize dragout of bath solution by using slotted barrels and tilted racks, or by using designs with flow-through holes to allow the tank solution to drip back into the tank.</p> <p>Use tank covers whenever possible.</p> <p>Minimize or reduce heating during tank operations and when the tanks are not in use.</p>

Type of Plating or Polishing Operation	Management and Pollution Prevention Practices
Non-cyanide Electrolytic Process Tanks Operated at pH < 12	<p>Follow all management and pollution prevention practices under “All Plating and Polishing Process Tanks” section [§63.11490(a)].</p> <p>Minimize plating and polishing metal HAP emissions from the process tanks by adding WAFS according to the manufacturer’s specifications.</p> <p>Ensure that any WAFS lost in normal processes are replenished, in the same proportion to the other ingredients as in the original make-up of the bath.</p> <p>Capture and exhaust tank emissions to any one of the following control devices—composite mesh pad, packed bed scrubber, mesh pad mist eliminator, or another control device of equivalent efficiency.</p>
Non-Electrolytic (Electroless) Processes	Follow all management and pollution prevention practices under “All Plating and Polishing Process Tanks” section.
Electroplating and Electroforming Process Tanks with Cyanide Operated at pH Values ≥12	Follow all management and pollution prevention practices under “All Plating and Polishing Process Tanks” section [§63.11490(a)].
Short-term or “Flash” Electroplating	<p>Follow all management and pollution prevention practices under “All Plating and Polishing Process Tanks” section [§63.11490(a)].</p> <p>Limit flash electroplating to no more than 1 hour per day or 3 minutes per hour of plating time, or use a tank cover for at least 95 percent of the plating time.</p>
Dry Mechanical Polishing Operations	<p>Provide capture of the particulate matter (PM) emissions from the process and transport them to cartridge, fabric, high-efficiency particulate (HEPA) filters, or another control device of equivalent efficiency.</p> <p>Operate all capture and control devices according to the manufacturer’s specifications and operating instructions and keep them in an easily accessible location in the facility at all times.</p>
Thermal Spraying Operations	<p>Provide capture of the PM emissions from the process and transport them to a water curtain, fabric filter, HEPA filters, or another control device of equivalent efficiency.</p> <p>Operate all capture and control devices according to the manufacturer’s specifications and operating instructions and keep them in an easily accessible location in the facility at all times.</p>

Applicability to NASA

This proposed plating and polishing area source NESHAP will apply to plating and polishing operations that occur onsite at NASA Centers that are area sources, as well as those conducted offsite at contractor and vendor area source facilities.

NASA Centers and Programs are advised to review this proposal to identify potential adverse impacts, and should note that it *does not* include an exemption for space vehicle-related operations. Of particular interest, the rule specifically lists [§63.11480(a)(1)] the following as examples of covered non-electrolytic metal coating operations—chromate conversion coating, nickel acetate sealing, sodium dichromate sealing, and manganese phosphate coating. Because the “plating and polishing metal HAP” list includes any compounds of cadmium, chromium, lead, manganese, and nickel, trivalent chromium conversion coating operations that use tanks

also must comply with the requirements. Chromium electroplating and chromium anodizing operations also are not covered, because they are regulated under a separate rule.

This proposed rule does not apply to research and development process units, as defined in §63.11510 as “any process unit that is used for conducting research and development for new processes and products and is not used to manufacture products for commercial sale, except in a *de minimis* manner.” This exemption is not likely to affect NASA operations unless those operations are conducted as research focused on plating and polishing processes. Research programs focused on other areas that use typical plating and polishing processes would probably not be considered exempt from the requirements of this rule.

Thus, flight hardware-related and other plating or polishing operations (including conversion coating processes) that are conducted at area source facilities may be required to comply with the requirements of this rule. Any issues or adverse impacts should be identified immediately to Sharon Scroggins/MSFC to facilitate preparation and submittal of comments to EPA by the 14 April 2008 deadline.