

# NESHAP

## FOR CHROMIUM EMISSIONS FROM HARD AND DECORATIVE CHROMIUM ELECTROPLATING AND CHROMIUM ANODIZING TANKS

### *QUESTIONS AND ANSWERS*



***November 1, 1996***

*Michigan Department of Environmental Quality*

*Environmental Assistance Division*

*Clean Air Assistance Program*

*P.O. Box 30457*

*Lansing, Michigan 48909-7504*

*(800)662-9278*

**in cooperation with the  
Michigan Department of Environmental Quality, Air Quality Division**

## **I. GENERAL**

- 1. If a facility received a mailing packet from the Air Quality Division, Michigan Department of Environmental Quality and is not subject to the standard, do they still need to return the notification form?**

*Facilities are not legally obligated to return initial notification forms if they are not subject. However, it is the facility's best interest to fill out the general information on the first page of the initial notification form and return it to the Air Quality Division so that they can remove the facility from their listing.*

- 2. How is decorative chrome and hard chrome defined in the regulation?**

*These terms are described in 40 CFR 63.341 of subpart N (pages 4963 and 4964 of the January 25, 1995 Federal Register notice).*

- 3. In hard chrome or decorative hexavalent chrome electroplating, what approximate percent of the overall mists emitted into the air is hexavalent chromium?**

*The majority, if not all, of the emissions are hexavalent chromium.*

## **II. APPLICABILITY**

- 1. What is the difference between "new" and "existing" tanks.**

*"Existing" tanks means all chromium electroplating or anodizing tanks that were constructed, reconstructed or installed on or before December 16, 1993. "Existing" hard chromium electroplating and chromium anodizing tanks must comply with the emission limit standards by January 25, 1997. Existing decorative chromium electroplating tanks using a chromic acid bath or a trivalent chromium bath should have been in compliance on January 25, 1996.*

*"New" chromium electroplating or anodizing tanks means all chromium electroplating or anodizing tanks that were constructed, reconstructed or installed after December 16, 1993. All facilities with an initial startup after December 16, 1993 but on or before January 25, 1995, were to comply with the emission limit standards, by January 25, 1995. All facilities with an initial startup after January 25, 1995, are required to comply with the emission standards immediately upon startup.*

- 2. How does an area/major source designation relate to a small/large hard chromium electroplating facility.**

*There is no relationship. The area/major source designation relates to potential HAPs emissions at a source (10 tons of one HAP/25 tons multiple HAPs). If the potential emissions of HAPs at a source is less than 10/25 tons, then the source is an "area" source. The small/large designation relates to rectifier capacity of a facility. A source could, therefore, be considered a "large" hard*

*chromium facility and also be an area source. Conversely, a source could be a small hard chromium facility and be a “major” source if it has emissions at or above the 10/25 tons or emissions of any other regulated air contaminant over the 100 ton threshold limits.*

**3. Are research and lab operations exempt from compliance with the NESHAP rule?**

*Yes, they are exempt. Other exemptions are as follows:*

*Process tanks associated with a chromium electroplating or chromium anodizing process, in which neither chromium electroplating nor chromium anodizing is taking place in the tank (e.g., rinse tanks, etching tanks and cleaning tanks);*

*Tanks that contain a chromium solution in which no electrolytic process occurs (e.g., chrome conversion coating tank where no electrical current is applied); and*

*Facilities that perform chromium passivating.*

**4. Is phosphating subject to this NESHAP rule?**

*No.*

**5. The only chrome plating I do at my facility is plating tools as part of tool maintenance operation. Is my facility considered exempt?**

*No. If a chromium electroplating operation is used to plate maintenance tools, it is an affected facility.*

**III. EMISSION LIMITATION STANDARDS**

**1. I understand hard chromium platers are not required to use fume suppressants. If they choose to use suppressants in addition to scrubbers, are they required to check the surface tension regularly?**

*Yes, if and only if both are required to meet the emission limit. If you only need the scrubbers to comply with the emission limit, then only monitor parameters associated with the scrubbers.*

**2. I am a “small” hard chromium facility in compliance at this time. If I add tanks to my facility and become a “large” hard chromium facility, do I have to be in compliance with the large hard chromium facility regulations immediately, or is there a grace period to come into compliance?**

*You must be in compliance within one year of when the “large” hard chromium facility designation is made. See 40 CFR 63.343(a)(5) of subpart N for more details*

3. **If a facility is using less than 60 million ampere hours of rectifier capacity but has more than that connected, can they be a “small” hard chromium facility?**

*If this limit is enforceable by the State through their permit process and the source never operates above 60 million amperes or if they use a non-resettable ampere-hour meter on the tank(s) and keep monthly records to show that the actual rectifier capacity is below 60 million ampere-hours, then the facility is considered a “small” hard chromium facility.*

4. **Do you retain liability from the date of compliance to the date you test your source? If so, would you suggest testing prior to the compliance date?**

*You are out of compliance if you don't test within 180 days after the compliance date and show compliance.*

5. **Can an electric bill for the facility be used to demonstrate a maximum cumulative rectifier capacity of less than 60 million ampere hours per year (amp-hr./yr.)?**

*If a conversion is done and approved by the Michigan's Department of Environmental Quality, Air Quality Division.*

6. **Paragraph 2 of Section 63.342(e) infers that one can use a trivalent bath without an incorporated wetting agent. If this is true, is it possible that a facility using a trivalent bath could manually add a wetting agent to the trivalent bath?**

*No, the wetting agent must be part of the bath ingredient.*

7. **Do wetting agents have to be manually added to chromic acid baths, or can you purchase a chromic acid bath with an incorporated wetting agent?**

*They have to be added manually.*

8. **Do regulations specify that you must have control devices on hard chromium tanks or that you must meet an emission standard?**

*Basically you have to comply with the emission standard. There is flexibility as to how you do it.*

9. **If you have different types of plating tanks (affected sources and non-affected sources) vented to a common control device, how do you calculate your emission limit?**

*Multiple source emission limits are described in 40 CFR 63.344(e) of the subpart N (pages 4971 and 4972 of the January 25, 1995 Federal Register notice.*

#### IV. COMPLIANCE AND MONITORING

**A facility that uses a wetting agent in their bath operates for only five minutes a day. To comply with the continuous compliance requirements of the rule, the initial monitoring frequency must occur once every four hours of tank operation for the first forty hours of tank operation. How should they monitor to maintain compliance?**

*The rule requires that they monitor the baths once every four hours for the first forty hours of tank operation. Given that they only operate the tanks five minutes a day:*

*4 hours = 240 min.*

*240 min./5 min. = 48 days*

*They should monitor once every 48 days*

#### V. INITIAL COMPLIANCE

##### 1. To whom do I submit my Initial Notification Form ?

*Diane Kavanaugh Vetort  
MI Department of Environmental Quality  
Air Quality Division,  
SE Michigan District Headquarters  
38980 Seven Mile Rd.  
Livonia, MI 48152-1006.*

*All other compliance and reporting forms should be submitted to your local Department of Environmental Quality, Air Quality Division district office (see attached map).*

##### 2. Where can you find more information regarding extensions of compliance deadlines? Who reviews and decides on requests for extensions?

*The general provisions of NESHAP addresses requests for extensions; specifically, 40 CFR 63.6(1) Subpart A. Michigan has applied for delegation of authority to implement and enforce the standard, however, full delegation has not been officially granted. Until further notice, requests for extensions should be sent to EPA Region V and copied to the Air Quality Division.*

*Diane Kavanaugh Vetort  
MI Department of Environmental Quality  
Air Quality Division  
S.E. Michigan District Headquarters  
38980 Seven Mile Road  
Livonia, MI 48152-1006*

*Karen Bell  
EPA- Region V/AE-7J  
Air and Radiation Division  
77 West Jackson Blvd.  
Chicago, IL 60604*

### 3. How do I calculate the maximum cumulative potential rectifier capacity?

*The maximum cumulative potential rectifier capacity is based on a maximum potential operating schedule of 8,400 hours per year for the facility and assumes that each tank is in operation for 70 percent of the total operating hours.*

*For example... To calculate the maximum cumulative potential rectifier capacity for a facility, sum the total installed rectifier capacities associated with all hard chromium electroplating tanks ( $\dot{a} C_R$  in amperes) and multiply this sum by hours/year and 0.7, as shown below:*

$$(\dot{a} C_R)(8,400)(0.7) = \frac{\text{ampere} - \text{hours}}{\text{year}}$$

## VI. RECORDKEEPING AND REPORTING FORMS

### 1. Do the notification of construction requirements pertain solely to those tanks with an initial startup after January 25, 1995?

*Yes. The notification of intent to construct or reconstruct must be submitted before construction or reconstruction begins.*

### 2. Are facilities required to submit reports to both the Environmental Protection Agency and the Michigan Department of Environmental Quality?

*No, only to the Michigan Department of Environmental Quality. Any information requested by the EPA will be supplied by the Department unless otherwise stated.*

## VII. TITLE V - RENEWABLE OPERATING PERMIT PROGRAM

### 1. Who is subject to the Renewable Operating Permit Program (Title V)?

*According to the NESHAP final rule promulgated on January 25, 1995, all facilities subject to the final rule regardless of their major or non-major source status must apply for and obtain a Renewable Operating permit. However, after discussion with industry, EPA came to the conclusion that they were imposing an undo hardship on a majority of owners and operators of non-major sources by requiring them to obtain a Renewable Operating permit. As a result, on December 13, 1995, EPA proposed to amend the NESHAP as follows:*

- The EPA is proposing to **permanently exempt all non-major sources** operating decorative chromium electroplating tanks or chromium anodizing tanks that use a wetting type-agent fume suppressant to comply with the surface tension limit of 45 dynes/cm and all trivalent decorative plating tanks incorporating wetting agents as a bath component from the requirement of obtaining a Renewable Operating permit.*

- EPA is proposing to **defer all other non-major sources** subject to the NESHAP from the requirement of obtaining a Renewable Operating permit until December 9, 1999. All sources receiving deferrals will need to submit a Renewable Operating permit within 12 months of such date (December 9, 2000).
- Facilities that are **major sources** will still need to submit a Renewable Operating permit application in accordance with the schedule found in Rule 210 of the Michigan Administrative Rules for Air Pollution Control. According to Rule 210, facilities with a Standard Industrial Classification (SIC) code of 3471 (electroplating) must submit a Renewable Operating permit application no later than July 30, 1996.

For assistance in determining your facilities applicability with the Renewable Operating permit program, contact the appropriate district office of the Air Quality Division, Michigan Department of Environmental Quality; the Air Quality Management Division, Wayne County Department of Environment (for facilities located in Wayne County); or the

Michigan Department of Environment Quality  
 Environment Assistance Division  
 Clean Air Assistance Program  
 P.O. Box 30457  
 Lansing, MI 48909-7957  
 (800) 662-9278

**2. What is the rationale for the Title V permits deferral?**

*The rationale for the 5-year deferral is explained in the December 13, 1995, Federal Register notice. Basically it is to reduce the burden on state permitting programs and the regulated sources.*

**3. Are sources qualifying for the Renewable Operating permit deferral also obtaining a deferral form complying with the NESHAP?**

*No. Only permit requirements are being deferred. Other requirements of the NESHAP apply as per the compliance schedule in the regulation.*

**VIII. PERFORMANCE TESTING**

**1. Can I perform my own initial performance testing?**

*Yes. The regulation contains EPA Reference Methods 306 and 306A which are used to measure the chromium concentration discharged to the atmosphere. The California Air Resources Board (CARB) Method 425 may also be used to measure chromium emissions as long as the analytical requirements listed in the regulation are adhered to. Alternate test methods may also be used as long as they have been validated using EPA Reference Method 301. To obtain a video of how to*

conduct a Method 306A test, contact Robin Segall, Emission Measurement Center, Office of Air Quality Planning & Standards, U.S. EPA at (919) 541-0893.

**2. If I am using a foam blanket-type fume suppressant, what are the testing requirements?**

*A facility must stack test to meet an emission limit unless specifically exempt under 40 CFR 63.343(b)(2) (page 4968 of the January 25, 1995 Federal Register notice). The facility must determine the appropriate foam thickness during a stack test or choose minimum values contained within the standard. The facility will then monitor for this parameter.*

**3. If a facility has several chrome plating facilities in numerous states, does each individual tank have to be stack tested, or can they apply one or more tests to the remaining facility locations?**

*No. In accordance with final rule, an affected source is each chromium electroplating or chromium anodizing tank. Therefore, each individual tank must be stack tested unless exempted.*

**4. When measuring emissions, does one measure the hexavalent chromium amount or the total chromium?**

*You can measure either hexavalent chromium or total chromium. The analysis used to measure hexavalent chrome is different than the one used to measure the total chromium. The analysis used to measure hexavalent chromium tends to be less expensive.*

**5. The accuracy of EPA Method 306-A has been described as plus or minus 50%. Would it be wise to do an initial test using this method to get in the ball park and then use Method 306 to show final compliance?**

*When EPA Methods 306-A and 306 are done properly, the results should be the same with a narrow range of error. Method 306-A has never been described as plus or minus 50%, it is just as accurate as Method 306. The plus or minus 50% is in reference to the early work done on the standard where EPA wanted a screening method that was plus or minus 50%. The screening method was never developed.*

**6. When stack testing is done to establish the operating parameter for a control device, will not the magnehelic gauge display a range of several inches during the test?**

*No. The magnehelic gauge may display a range of several tenths of an inch of water not several inches*

**7. Should the facility perform multiple stack tests during multiple operating conditions?**

*No. The facility must show compliance for all operating conditions. Where a facility had multiple operating conditions, the facility should demonstrate compliance under worst case operating conditions.*

**8. What is the effect on air flow and volume by using composite mesh pad at the end of the system?**

*A composite mesh pad functions as a restriction at the outlet so airflow will decrease. The increase in pressure drop will require a higher fan capacity.*

**IX. PERMITTING**

**1. If I submit a Permit to Install for a new chromium electroplating tank, will Rule 230 of the Air Pollution Control Rules require more stringent controls than those Maximum Achievable Control Technology (MACT) found in the NESHAP final rule?**

*Chromium electroplating sources are required to obtain a Permit to Install for chromium plating processes in accordance with Rule 201 of the Air Pollution Control Rules promulgated under Article II, Chapter 1, Part 55, of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994. Since promulgation of the Air Toxics Rule, Rule 230, on April 17, 1992, permit applications for electroplating sources are reviewed in accordance with Rule 230. The rule requires evaluation of the initial risk screening level (IRSL) and initial threshold screening level (ITSL) of chemicals. It also considers what is Best Available Control Technology for toxics (T-BACT) and modeling. It should be noted that the Rule 230 evaluation is risk based, while the MACT standard is technology based.*

*Since T-BACT is a site specific determination, the MACT standard contained within the NESHAP final rule may not always be accepted as T-BACT.*

**2. Do chromium electroplating tanks need a Permit to Install issued by the Air Quality Division of Michigan Department of Environmental Quality?**

*Rule 201 of the Michigan Administrative Rules for Air Pollution Control requires a person to obtain an air use permit prior to installation, relocation or modification of a process that may emit air contaminants. Rule 279 exempts the following process equipment from the requirement for a Permit to Install:*

*Reconstruction of air pollution control equipment with equivalent or more efficient equipment.*

*Installation , construction , or replacement of air pollution control equipment for an existing process or process equipment for the purpose of complying with the National Emission Standards of Hazardous Air Pollutants.*

*Many electroplating and anodizing facilities must operate a variety of processes some of which are exempted and others that require a Permit to Install. Facilities that need a permit or have permitting questions should contact either the Permit Section, Air Quality Division, of the Michigan Department of Environmental Quality, (517) 373-2856, or the Michigan Clean Air Assistance Program (1-800-662-9278).*

## **X. INITIAL COMPLIANCE**

- 1. We installed a composite mesh pad scrubber in 1994 and conducted emission testing about a month later. Will this testing be enough to prove compliance or will testing be necessary again once the EPA standard goes into effect on January 25, 1997?**

*The Michigan Department of Environmental Quality, Air Quality Division is authorized to make these determinations.*

## **XI. COMPLIANCE MONITORING AND CONTROL**

- 1. As I understand it, I must monitor my tanks once every four hours. Is this four hours of plating time or every four hours, whether the vat is plating or not in operation?**

*Every four hours of plating time.*

- 2. How much variation will be accepted in an operating parameter? Is the monitored operating parameter then anywhere within this range?**

*An affected source may establish a range of compliant operating parameter values or may set as the compliant value the average value over three test runs of one performance test. For example, in a composite mesh pad system, a  $\pm 1$  inch of water column from the pressure drop value (average described above) may be accepted. In a packed-bed scrubber system, a  $\pm 1$  inch of water column from the pressure drop value and  $\pm 10$  percent from the velocity pressure value may be accepted as the compliant range. See 40 CFR 63.343(c)(1-7) (pages 4968-4969 of the January 25, 1995 Federal Register notice).*

- 3. The final rule requires a facility to maintain records of the tanks operating time. When does a tank's operating time begin, when the tanks are initially heated or when they are being used and current is applied?**

*When the tanks are being used and current is applied.*

**4. I am not familiar with the stalagmometer. How do I get more information about how to use this instrument.**

*Call Michigan's Department of Environmental Quality, Environmental Assistance Division, Clean Air Assistance Program at (800) 662-9278 to get names of vendors. Vendors should be able to explain their use.*

**Where can I go for additional help?**

*Copies of the Federal Register notices, recordkeeping and reporting forms and Renewable Operating Permit information can be obtained from the Clean Air Assistance Program. If you have any questions regarding this regulation, contact either of the following:*

**Michigan Department of Environmental Quality  
Environmental Assistance Division  
Clean Air Assistance Program  
P.O. Box 30457  
Lansing, MI 48909-7957  
Telephone: 1-800-662-9278 • Fax: (517) 335-4729**

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