



NESHAP Plating and Polishing Standards

Subpart W of Part 63



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NESHAP + Your Company = Rules and Requirements

NESHAP stands for National Emission Standards for Hazardous Air Pollutants (HAPs)

The HAPs of concern in your industry are: chromium, cadmium, lead, nickel and manganese

EPA is required to:

- Identify those HAPS with the highest risk to human health and the environment
- Identify the industrial categories who emit these HAPs
 - of which the plating and polishing industry is only one
- Develop NESHAPs (or standards) for these categories to reduce emissions of these HAPs

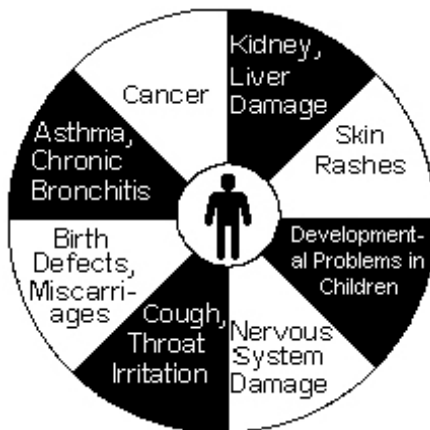


So why is the state of Oregon involved?

- Every regulated industry no matter where they operate is required to be in compliance with the federal rule
- Each state can decide to adopt the rule or have EPA implement the rule
 - Oregon DEQ has decided to adopt the rule because it is better for industry
 - Ability to be less heavy handed
- Oregon DEQ adopted the rule in December 2009
 - State will be helping with assistance, assigning permits and doing inspections



Why should I care?



- These metals are known or suspected of causing cancer and other diseases in humans.
 - Specifically, you, your employees, the public and potentially your family



Any questions so far?

Now for the meat and potatoes



Am I *engaged* in one or more of the following regulated processes?

1. Non-chromium electroplating
2. Electroless or non-electrolytic plating
3. Other non-electrolytic metal coating processes:
 - chromate conversion coating
 - nickel acetate sealing
 - sodium dichromate sealing
 - manganese phosphate coating
 - thermal spraying
4. Dry mechanical polishing of finished metals and formed products after plating
5. Electroforming
6. Electropolishing



Do I have any exempted equipment or processes?

First, determine if you have any exemptions

- Process units subject to Subpart N
 - Hard and decorative chrome electroplating
 - Chromium anodizing tanks
- R&D process units for new processes & products
 - Not used to manuf. products for sale except in a de minimis manner (like an advertising mock-up)
- Process units used “strictly” for educational purposes
- Thermal spraying to “repair” surfaces
- Dry mechanical polishing to “restore” the original finish to a surface “before” plating

If you answered yes then this NESHAP does not apply to that equipment or to those process units

Be sure to determine if other equip or processes are affected



Am I subject to the rule?

Do I operate any process units or perform activities that contain, apply or emit one of the following 5 metal Hazardous Air Pollutants (MHAPs)?

Cadmium, Chromium, Nickel, Lead or Manganese

Note: Rule applies to materials that contain > .1% for carcinogens and > 1% for non-carcinogens. If < these amounts material is exempt from the rule.

NO

- Maintain records as proof of exemption from the rule
- DEQ is asking for an IN for our records, but one is not required

YES

Determine what equipment or processes are “affected”

In what equipment or processes are the MHAPs used or emitted?

- Tanks
- Thermal spraying operations
- Dry mechanical polishing operations



So the standard applies – What now?

In a nutshell:

- **You must comply with the requirements in the rule**
 - including equipment standards and management practices
- **You must submit the required forms**
 - Initial notification and /or notice of compliance status
 - Notification of compliance status for existing and new equip or processes is due now
- **You must apply for a permit**
 - Application packets will be mailed in Oct/Nov with permitting to start in Dec/Jan
 - Annual permit fee of \$720
 - Important to submit application on time or an additional fee could be applied



Process tanks/units

Non-cyanide:

*Electroplating, electroforming & electropolishing tanks **operated at a pH of <12**. Electricity used to add/remove metals from parts*

Tanks must be in compliance with 1, 2 OR 3

1. Wetting agent/fume suppressant used to reduce surface tension
 - In amounts recommended
 - when replenishing - add in proportion to other bath chemicals
 - Record amount and frequency of additions
2. Control device used to capture and exhaust emissions
 - Composite mesh pad, packed bed scrubber, mesh pad mist eliminator
 - Operate per manuf specs & instructions and keep where operators have access , OR
3. Cover tanks effective surface area (depends on type of tank)



Process tanks/units

Non-cyanide (cont)...

Batch

- solid structure, impervious material
- cover **95% of time** tank in operation
- record time tank operated with cover in place

Continuous (reel-to-reel, substrate continuously fed)

- structure-solid or combination, impervious material
- cover **75% of surface** during operation
- record amount of tank coverage and time cover in place

Flash or short term

- Use no more than 3 minutes in any one hour or more than 1 hour in any one day, OR
- Cover effective surface area **95% or more** of the plating time
- Comply with appropriate BMPs (to follow)
- Record daily plating times



Process tanks/units

Dual purpose (both short & long term duration)

Requirements based on the operating process in use at the time

- wetting agent/fume suppressant, control device, or tank cover
- comply with appropriate BMPs
- comply with appropriate recordkeeping

Cyanide tanks:

Electroplating, electroforming & electropolishing tanks operated at a pH of >12

Requirements

- Measure and record the tank PH on start-up
 - no additional readings required
- Comply with appropriate BMPs



All affected process units

Best management practices (BMPs)

- **Minimize bath agitation when removing parts**
(except as necessary to meet part quality requirements)
- **Maximize draining of bath solution back into tank**
 - extend drip time and withdraw parts slowly
 - use drain boards
- **Optimize barrel/rack/parts design to minimize dragout**
 - slotted barrels
 - tilted racks
 - parts with holes
- **Minimize bath contamination**
 - prevent dropping or quickly recover dropped parts
 - use distilled/de-ionized water
 - use water filtration
 - pre-clean and thoroughly rinse pre-treated parts



All affected process units

BMPS (cont)...

- **Use tank covers**
 - if owned & available for tanks not already required to be covered
- **Minimize/reduce heating of tanks** (if quality/production unaffected)
- **Perform regular repair, maintenance & preventive maintenance on all tank equipment and controls**
 - Record each event
- **Maintain quality control of chemical and other bath ingredient concentrations**
- **Maintain good housekeeping practices**
 - sweeping, vacuuming, periodic washdowns
- **Minimize spills and overflow of tanks**
- **Use squeegee rolls in continuous (reel-to-reel) tanks**



All affected process units

BMPS (cont)...

- **Perform regular inspections**
 - identify leaks
 - opportunities for P2
- **Operate capture & control devices according to manuf specs and instructions**
- **Keep manuf specs and operating instructions at facility at all times and accessible**



Dry mechanical polishing

Used for removing defects and smoothing the surface of finished metals & formed products after plating with MHAPs

General requirements

- Operate capture & control devices according to manuf specs and instructions
- Keep manuf specs and operating instructions at facility at all times and accessible

Specific Requirements

- Operate a capture system that transports particulate matter (PM) emissions to one of the following control devices
 - cartridge filter
 - fabric filter
 - high efficiency particulate air (HEPA) filter



Thermal spraying operations

Best management practices (BMPs)

Comply with BMPs discussed for all affected process units

Specific requirements

“Existing” permanent (const/re-const. on or before 3/14/ 2008)

- Operate a PM capture system that transports emissions to a:
 - water curtain
 - fabric filter, or
 - HEPA filter

“New” permanent (const/re-const. after 3/14/ 2008)

- Operate a PM capture system that transports emissions to a:
 - HEPA filter

“Temporary” (*Does not include spraying in a dedicated booth*)

- Duration: no more than 1 hour during any one day
- Conducted in place or in a stationary location
- Document length of activity and where conducted each day



How do I demonstrate continuous compliance?

Equipment Operation

- Operate and maintain equipment, process units & control devices as required by all applicable standards and BMPs
- Take immediate corrective action to return equipment, process units and control devices to normal operation if malfunction or failure occurs

Recordkeeping

- For wetting agent & fume suppressant (WAFS) “mixtures”
 - Keep records of material added to verify a match with the original make-up of the tank
- For wetting agents purchased separately
 - Keep records of each addition of material to the tank
 - State in annual certification that material was added according to manuf specs & instructions



Continuous compliance (cont)?

Recordkeeping (cont)...

- For capture and control devices used
 - State in annual certification that equipment is operated and maintained according to manufacturer's specs & instructions
 - Record results of all system inspections, deviations and corrective actions taken
- For cyanide tanks keep record of initial PH reading
- For non-cyanide tanks
 - The amount and frequency of WAFS additions
- Keep **daily** records of:
 - Tank operation time
 - Amount of tank coverage



Notification, reporting and recordkeeping

Requirements for affected businesses

Submission depends upon start-up date of business or process

Initial Notification (IN)

Existing and new: should have already been submitted. If not the NCS will count as both

Not currently in operation: no later than 120 calendar days after becoming subject to the rule (upon start-up of equip or process)

Notification of Compliance Status (NCS)

Existing: Was due by close of business July 1, 2010. If not submitted you must submit ASAP!

New: Was due 7/1/2008 or upon start-up of any new business or process. If not submitted you must submit ASAP!

Notification of Compliance Status and annual report must verify that all requirements are being met for each tank & each thermal spray & mechanical polishing operation



Notification, reporting and recordkeeping

Compliance certification report

- Prepare annually by Jan. 31st following reporting year and keep available for review
- No need to submit unless a deviation occurs. If one occurs:
 - Postmarked no later than January 31st following reporting year
 - Submit w/report describing deviations and corrective actions

General recordkeeping for all affected processes & equip.

Keep the following records onsite and readily accessible for review

- List of affected sources and methods of compliance
- Copies of initial and notification of compliance status forms plus all supporting documentation
- Copies of annual, deviation and corrective action reports
- Records required to show initial and continuous compliance with required equip standards and mngt/P2 practices

** Keep records for 5 years following date of each occurrence, measurement, maintenance, corrective action, report or record*



Permitting information and requirements

As mentioned previously you will be required to submit a permit application and receive a permit to operate no matter how long you have been in business

- Application packets will be sent to your mailing address in Oct/Nov
- Assignment to the general permit will start in Dec/Jan
- General permits are like co-op permits. The cost of permitting can be kept lower because everyone is on the same permit and all of the requirements to be inspected are the same.
- Annual permit fee of \$720
- Important to submit permit application on time as late applications are subject to a penalty



What do I do if I need help or have questions?

Visit DEQ's small business webpage at:

<http://www.deq.state.or.us/aq/bap/neshap.htm>

There are factsheets, forms, summaries and much more available to copy, fill out or download

Contact me, Rebecca Hillwig, DEQ's Small Business Assistance Program Coordinator and Ombudsman

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Contact your local DEQ office