

OSHA Regulation Final Rules

Occupational Exposure to Hexavalent Chromium

29 CFR Parts 1910.1026

New Hexavalent Chrome Standard

- **Ten-Fold reduction in Permissible Exposure Level (PEL)**
 - 52 ug/m³ to 5 ug/m³ PEL and 2.5ug/m³ action level (AL)
- **New PEL is NOT the target to reach for facilities**
 - PEL of 5.0 ug/m³ means facilities must meet an Action Level of 2.5 ug/m³
- **All provisions of the rule, except engineering controls, must be implemented by November 27, 2006.**



Who is Affected?


- **Facilities with the following operations may be affected**
 - Welding and/or Grinding
 - Stainless Steel, Inconel, or other alloys
 - Heat and dust generating operations
 - Note: Mild steel can have enough chromium to result in exposure to Cr6 over action level.
 - Surface Finishing Operations
 - Hard Chrome Plating
 - Decorative Chrome Plating
 - Chromic Acid Anodizing
 - Chromate Conversion Coatings (e.g., Zn, Cd & Al)
 - Plating on Plastics
 - Passivation
 - Chemical Mixing & Blending
 - Painting Operations

Note: this is not an exhaustive list of areas impacted by this regulation

What Do You Have To Do?

- **You must perform employee exposure testing**
- **You may have to perform:**
 - engineering assessments
 - medical surveillance
 - define exposure areas, post alerts, and limit access to these areas
 - provide respiratory protection
 - provide protective clothing at no cost to employees
 - provide change rooms, use special laundry services shower facilities and separate eating and drinking facilities
 - Additional recordkeeping requirements
- **If exposures range in proximity of 2.5 ug/m³, applicability of rule is triggered.**
- **Conduct exposure monitoring at your key facilities and encourage contractors and vendors to test employees.**

Key Compliance Provisions

- **Effective Date is May 30, 2006**
 - **Compliance deadlines:**
 - < 20 employees – May 30, 2007
 - > 20 employees – November 27, 2006
 - **Engineering Controls – May 31, 2010**
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- Exposure Monitoring & Medical Surveillance
 - Personal Protective Equipment
 - Respiratory Protection
 - Housekeeping
 - Hygiene Practices & Change Rooms
 - Training & Hazard Communication

Four Levels of Compliance

Based on Initial Monitoring Results

- **Exempt if below 0.5 $\mu\text{g}/\text{m}^3$ under any condition**
- **Between 0.51 and 2.5 $\mu\text{g}/\text{m}^3$**
 - Housekeeping – no dust
 - Clean eating and drinking areas
- **Above AL of 2.5 $\mu\text{g}/\text{m}^3$ (for more than 30 days per year)**
 - All of the above
 - Install engineering controls within four years
 - Personal respiratory protection
 - IH Monitoring every 6 months
 - Medical Surveillance, at least annually
 - Record keeping, Hazard communication training
- **Above the PEL 5.0 $\mu\text{g}/\text{m}^3$**
 - All of the above
 - Establish regulated areas (roped off, limited access, protective clothing, washing on paid time, work side/street side washing facility, no eating or smoking)
 - IH Monitoring every 3 months

Initiating Compliance

- **Map all stainless operations**
 - Use the latest, most accurate measuring methods and approved laboratories.
 - OSHA ID-215 will be used for enforcement.
- **Begin engineering control feasibility studies and cost calculations (they take time)**
 - More exhaust ventilation, separate buildings?,
 - Environmental permit effects,
- **Change of welding practices indoors and outdoors, training, new welding techniques, new fillers**

The above examples of possible actions that you may consider to avoid triggering the regulation (and remaining below AL 2.5 $\mu\text{g}/\text{m}^3$)...this list is not exhaustive.

Sampling Methods

- **Air Sampling Methods**

- NIOSH 7600
 - Older method with higher detection limit
 - More difficult to collect samples
- OSHA ID 215
 - Newer method with lower detection limit
 - Easier in the field.

- **Surface Sampling Method**

- OSHA ID W4001



Who needs to Comply

- **General Manufacturing**
- **Semiconductor Equipment Manufacturers**
- **Ship Builders**
- **Aircraft Builders**
- **Heavy Manufacturing**
- **Oil & Gas**
- **Metal Fabrication & Finishing**
- **Painters & Coaters**
- **Chemicals, Pigments, Catalysts**
- **Any facility whose processes may generate chromium byproducts**

Resources & References

- www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=13096
- www.cdc.gov/niosh/topics/hexchrom/
- www.thefabricator.com/Safety/Safety_Article.cfm?ID=1336

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