



A Health and Safety Alert from the TSS Safety Committee: 14-May-2006

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OSHA Issues Final Standard on Hexavalent Chromium

WASHINGTON -- The Occupational Safety and Health Administration (OSHA) will publish a final standard for occupational exposure to hexavalent chromium in the Feb. 28, 2006, Federal Register. The standard covers occupational exposure to hexavalent chromium (Cr(VI)) in general industry, construction and shipyards.

"OSHA has worked hard to produce a final standard that substantially reduces the significant health risks for employees exposed to hexavalent chromium. Our new standard protects workers to the extent feasible, while providing employers, especially small employers, adequate time to transition to the new requirements," said Jonathan L. Snare, acting assistant secretary for occupational safety and health.

The standard will be published in accord with the timetable established by the U.S. Court of Appeals for the Third Circuit which in April 2003 ordered OSHA to promulgate a standard governing workplace exposure to hexavalent chromium.

The new standard lowers OSHA's permissible exposure limit (PEL) for hexavalent chromium, and for all Cr(VI) compounds, from 52 to 5 micrograms of Cr(VI) per cubic meter of air as an 8-hour time-weighted average. The standard also includes provisions relating to preferred methods for controlling exposure, respiratory protection, protective work clothing and equipment, hygiene areas and practices, medical surveillance, hazard communication and recordkeeping.

Hexavalent chromium compounds are widely used in the chemical industry as ingredients and catalysts in pigments, metal plating and chemical synthesis. Cr(VI) can also be produced when welding on stainless steel or Cr(VI)-painted surfaces. The major health effects associated with exposure to Cr(VI) include lung cancer, nasal septum ulcerations and perforations, skin ulcerations, and allergic and irritant contact dermatitis.

Employers are responsible for providing a safe and healthful workplace for their employees. OSHA's role is to assure the safety and health of America's workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health.

For more information, visit www.osha.gov.

The Final Standard on Hexavalent Chromium *Effective and Practical Protection for Workers*

Summary

- On February 28, 2006, pursuant to a 2003 court order, the Department of Labor issued a final standard addressing occupational exposure to hexavalent chromium, also known as Cr(VI), a natural metal used in a wide variety of industrial activities, including the manufacture of stainless steel, welding, painting and pigment application, electroplating, and other surface coating processes.
- OSHA determined that the new standard is necessary to reduce significant health risks posed by occupational exposure to Cr(VI). The new standard is based on a careful, extensive analysis of all facts and evidence gathered during the Occupational Safety and Health Administration's (OSHA) rulemaking process, which

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included two weeks of public hearings and comment periods totaling more than five months. OSHA relied upon the best available, peer-reviewed science.

- The new standard covers the general industry, construction, and shipyards sectors and will protect workers against exposure to hexavalent chromium, while providing employers with adequate time to transition to the new requirements.
- Approximately 558,000 workers are covered by the provisions of the new standard.

What Does the Standard Do?

- **Reduces Worker Exposure to Cr(VI).** The new standard provides greater protection against significant health effects, such as lung cancer, nasal septum ulcerations and perforations, and dermatitis by lowering the permissible exposure limit (PEL) from 52 micrograms of Cr(VI) per cubic meter of air (52 $\mu\text{g}/\text{m}^3$) to 5 $\mu\text{g}/\text{m}^3$ for all sectors.
- **Practical and Effective Requirements.** The new standard requires covered industries to achieve the PEL through engineering and work practice controls to the extent that is technologically feasible. Additional provisions cover exposure determinations, respiratory protection, protective work clothing and equipment, medical surveillance and communication of hazards.
- **Supplemental Provision for Aerospace Painting.** The new standard recognizes that, given available technology, the lowest level employers involved in aerospace painting operations of whole aircraft or large aircraft parts can reach through feasible engineering and work practice controls is 25 $\mu\text{g}/\text{m}^3$. For these types of aerospace painting, OSHA requires the use of engineering and work practice controls to reduce exposures to 25 $\mu\text{g}/\text{m}^3$, and allows the supplemental use of respirators to be used to achieve the PEL.
- **Protecting Workers Most at Risk.** The new standard will focus protections on workers facing heightened health risks from airborne exposures. An exemption is provided for employers who can demonstrate that Cr(VI) exposures under any anticipated working conditions will not exceed 0.5 $\mu\text{g}/\text{m}^3$.
- **Reasonable Transition Time.** Given the significant PEL reduction required by the new standard, OSHA is providing a reasonable transition period for employers to implement the technologies and practices needed for compliance.
- **Effective date of the standard:** 90 days from publication.
 - This period is intended to allow affected employers the opportunity to familiarize themselves with the standard.
- **Start-up date for all provisions, except engineering controls:** 180 days from the effective date (one year for employers with fewer than 20 employees).
 - This period is designed to allow employers sufficient time to complete initial exposure assessments, obtain appropriate work clothing and equipment, and comply with other provisions of the standard.
- **Start-up date for engineering controls:** four years from the effective date for all employers.
 - This period allows affected employers sufficient time to design, obtain, and install the necessary control equipment.

What Are the Major Differences Between the Proposed and Final Standards?

- **Permissible Exposure Limit**
Proposed: A PEL of 1 $\mu\text{g}/\text{m}^3$ was proposed.

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- **Final:** Based on the rulemaking record, OSHA determined that a PEL of 5 µg/m³ is the lowest level that is technologically and economically feasible for industries impacted by this standard.

- **Portland Cement Exclusion**
Proposed: OSHA proposed to exclude exposures to portland cement in the construction industry because of data indicating that airborne exposures to Cr(VI) in construction activities involving portland cement were very low and posed little lung cancer risk. Risks from dermal exposure could be addressed through existing OSHA standards.

Final: OSHA expanded the exclusion for portland cement to general industry and shipyards, as well, because new data submitted during the public comment period indicated that airborne exposures to Cr(IV) from portland cement in these industries are comparable to exposures in construction.

- **Scope Exemption**
Proposed: No proposed exemption.

Final: OSHA determined that there are certain work operations that may have low airborne Cr(VI) exposure levels comparable to those generated by portland cement and added an exemption for employers who can demonstrate that under no expected conditions will concentrations be above 0.5 µg/m³.

- **Special Provision for Aerospace Painting**
Proposed: OSHA proposed that all industries covered by the standard achieve the PEL through the use of engineering and work practice controls to the extent feasible.

Final: OSHA determined that it would not be technologically feasible to reduce exposures to the PEL through engineering and work practice controls when whole aircraft or large aircraft parts are being painted. Therefore, employers are only required to use engineering and work practice controls to reduce exposures to 25 µg/m³ and must then use respiratory protection to meet the PEL.

- **Exposure Determination**
Proposed: In the proposal, OSHA did not include exposure determination provisions for construction or shipyards because of the practical difficulties in characterizing exposures in these work settings.

Final: The final standard covering general industry, construction, and shipyards all have identical provisions for exposure determination. The standard also adds a performance-oriented option in all industry sectors to increase employers' flexibility in making exposure determinations.

- **Medical Surveillance**
Proposed: OSHA proposed that medical surveillance be offered to employees with signs and symptoms of Cr(VI)-related health effects, exposures in emergencies, or exposures for 30 or more days above the PEL.

Final: The standard takes into account the new PEL and changed the exposure-based trigger to 30 or more days above the action level (one-half the PEL). In addition, the standard adds this trigger to the construction and shipyard standards.

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