

<i>HEALTH AND SAFETY MANUAL</i>		
Title: Hexavalent Chromium		
Approved by: Greg Savoy		Rev. 2/14/12

1 Purpose

The purpose of this program is to assist our employees with knowledge of the toxic effects, and how to minimize exposures to hexavalent chromium.

Hexavalent Chromium has many uses in industrial processes. Some major industrial sources of hexavalent chromium are:

- Chromate pigments in dyes, paints, inks, and plastics.
- Chromates added as anti-corrosive agents to paints, primers and other surface coatings.
- Chrome plating by depositing chromium metal onto an items' surface using a solution of chromic acid.
- Particles released during smelting of ferro-chromium ore.
- Fume from welding stainless steel or nonferrous chromium alloys.
- Impurity present in Portland cement.

2 Requirements:

2.1 An initial assessment to determine whether there is hexavalent chromium in the workplace:

- Chromate pigments in dyes, paints
- Review MSDS to help make this determination
- Review processes in workplace to determine if hexavalent chromium could exist (e.g., welding on stainless steel, electroplating, chrome stripping).
- If hexavalent chromium exposures do exist, ask whether the Company actually needs the substance in the workplace. It would be best to eliminate it and/or substitute it with something less toxic.

2.2 Housekeeping:

- The prevention of spreading of dust and fume is critical to minimize exposure.
- Vacuuming by use of a HEPA (High Efficiency Particulate Air Filter) is the preferred method. Proper use of a HEPA vacuum prevents the dust from being dispersed back into the air.

- Eating, drinking, smoking and applying lip balm and cosmetics is prohibited in areas where hexavalent chromium is used.

2.3 Employee Exposure/Monitoring

- No employee shall be exposed in excess of 5 micrograms per cubic meter of air (PEL) as an 8-hour TWA.
- If the initial exposure assessment finds hexavalent chromium exposures to be at or above the action level (2.5 micrograms per cubic meter of air), periodic personal exposure air monitoring must be done at least every six months. If the hexavalent chromium levels are at or above the PEL in the initial assessment then monitoring must be done at least every three months.
- Periodic monitoring may cease if two consecutive personal air samples, taken at least seven days apart, indicate that results are below the action level.
- If an employee is exposed to hexavalent chromium above the PEL for more than 30 days per year, implementation of engineering and work practice controls to reduce and maintain employee exposures to hexavalent chromium to or below the PEL shall be completed, unless the Company can demonstrate that such controls are not feasible.
- If engineering and work practice controls do not reduce exposures below the PEL, respiratory protection must be used.
- PPE required when exposure is determined shall be provided to employees at no cost.

2.4 Medical Surveillance

- Company shall set up a medical surveillance program at no cost to employees if they are exposed to hexavalent chromium over the action level (2.5 micrograms per cubic meter of air) for more than 30 days per year, if employees exhibit signs or symptoms of adverse effects of exposure or if they are exposed in an emergency. The contents of the medical examination must include:
 - A medical and work history, with emphasis on: Past, present, and anticipated future exposure to hexavalent chromium; any history of respiratory system dysfunction; any history of asthma, dermatitis, skin ulceration, or nasal septum perforation; and smoking status and history.
 - A physical examination of the skin and respiratory tract.
 - Any additional tests deemed appropriate by the physician or licensed health care professional (PLHCP) conducting the exam-

2.5 Recordkeeping

- Company shall maintain an accurate record of all air monitoring conducted to comply with the requirements of the hexavalent chromium standard. The record shall include at least the following information:
 - The date the measurement was taken;
 - The operation involving exposure to hexavalent chromium that is being monitored;
 - Sampling and analytical methods used and evidence of their accuracy;
 - Number, duration, and results of samples taken;
 - Type of personal protective equipment, such as respirators worn; and

- Name, social security number, and job classification of all employees represented by the monitoring, indicating which employees were actually monitored.
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Exposure monitoring records shall be kept for at least 30 years. Company shall provide employee access to the monitoring records in a reasonable time, place and manner. 2.5

2.6 Regulated Areas

- Any area where employees may have exposures to airborne concentrations of hexavalent chromium that exceed or may be reasonably expected to exceed the PEL must be demarcated from the rest of the workplace in a manner that adequately establishes the boundaries of the regulated area and alerts employees to these boundaries.
- Access to regulated areas must be restricted to persons authorized by the Company and required by work duties to be in the area.

2.7 Hygiene Facilities

When protective equipment and clothing is required, Company shall provide change rooms and washing facilities that conform to OSHAs' Sanitation regulation (1910.141).

- The change rooms must have separate storage facilities for protective clothing and equipment and for street clothes to prevent cross contamination.
- The washing facilities must be readily accessible and capable of removing hexavalent chromium from the skin.
- Company shall verify that employees use these facilities when necessary.
- One shower for every 10 employees of each sex during the same shift must be supplied along with body soap, hot and cold water and clean towels.

2.8 Training

- Company shall provide the following information and training to employees if they have potential hexavalent chromium exposure at their workplace:
 - The contents of the OSHA Hexavalent Chromium Standard (29CFR1910.1200).
 - The purpose and a description of the medical surveillance program required by the standard;
 - The specific nature of the operations which could result in overexposure to hexavalent chromium;
 - The purpose, proper selection, fitting, use and limitations of respirators and any other personal protective equipment used;
 - The proper use of ventilation or other engineering controls used to reduce employee exposures to hexavalent chromium.

3 References:

OSHA 29CFR1910.1026

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4 Exhibits:

None.