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 Foreman: _____

Date: _____
 G.C. _____

SMOHIT Safety Sense
 Toolbox Talks for the Sheet Metal Industry

Hexavalent Chromium and Chromium Dust Exposure

- Hexavalent chromium is considered a potential lung carcinogen. Studies of workers in the chromate production, plating, and pigment industries consistently show increased rates of lung cancer. The main exposure source for sheet metal and HVAC workers is welding on stainless steel.
- The primary means of human exposure to hexavalent chromium are inhalation, ingestion, and skin contact. Hexavalent chromium can be inhaled when hexavalent chromium dust, mist, or fumes are in the air. Particles of chromium dust can contaminate hands, clothing, beards, food, and beverages.
- Direct eye contact with chromic acid or chromate dusts can cause permanent eye damage. Hexavalent chromium can irritate the nose, throat, and lungs. Repeated or prolonged exposure can damage the mucous membranes of the nasal passages and result in ulcers. In severe cases, exposure causes perforation of the septum (the wall separating the nasal passages). Acute exposures to liquid hexavalent chromium vapors may cause perforation of the nasal septum within a week of exposure.
- Prolonged skin contact can result in dermatitis and skin ulcers. Some workers develop an allergic sensitization to chromium. In sensitized workers, contact with even small amounts can cause a serious skin rash. Kidney damage has been linked to high dermal exposures.
- There are several ways to reduce exposure to hexavalent chromium. The preferred approach in welding operations is point-of-operation ventilation. An approved respirator may be needed in certain welding operations where ventilation alone is inadequate. An air-line respirator may be required if the welding is performed in an enclosed space. The chromium coating on coated base metals must be stripped for at least four inches from the area of heat application before welding or cutting.
- Other measures to protect against hexavalent chromium exposure include eye protection, showering, and changing into street clothes before leaving the plant.

Instructor Tips

- **The main exposure source for sheet metal and HVAC workers is welding on stainless steel.**

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Reference: OSHA 29 CFR 1910.1000, 1926.57, .353