



## VI. HEALTH HAZARD DATA

**NOTE:** Steel products under normal conditions do not present an inhalation, ingestion or contact health hazard. However, operations such as burning, welding, sawing, brazing, grinding, and possibly machining etc., which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates, may present a health hazard.

### EFFECTS OF OVEREXPOSURE:

Chronic inhalation of high concentrations of iron oxide fumes or dusts may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. The inhalation of high concentrations of freshly formed oxide fumes and dusts of Manganese, Copper, lead and/or Zinc in the respirable particle size range can cause an influenza like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills.

Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation, nose bleed, ulceration and perforation of the nasal septum. Industrial exposure to certain forms of hexavalent chromium has been related to an increased incidence of lung cancer (See Section IX).

### MAJOR EXPOSURE HAZARD

INHALATION  SKIN CONTACT  EYE CONTACT  
 INGESTION

### EMERGENCY AND FIRST AID PROCEDURES:

For overexposure to airborne fumes and particulates, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly.

Treat metal fume fever by bed rest, and administer a pain and fever reducing medication.

## VII. SPILL OR LEAK PROCEDURES

NOT APPLICABLE TO STEEL IN THE SOLID STATE

## VIII. SPECIAL PROTECTION INFORMATION

**RESPIRATORY:** NIOSH/MSHA- approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

**SKIN:** Protective gloves should be worn as required for welding, burning or handling operations.

**EYE:** Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

**VENTILATION:** Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding, or machining to prevent excessive dust or fume exposure.

**OTHER PROTECTIVE EQUIPMENT:** Depending upon the conditions of use and specific work situations, additional protective equipment and/or clothing may be required to control exposures.

## IX. SPECIAL PRECAUTIONS

### PRECAUTION TO BE TAKEN IN HANDLING AND STORAGE:

Operating with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Avoid breathing metal fumes and/or dusts.

**OTHER COMMENTS:** IARC (Suppl. 1,29-30, 1979) has determined that there is sufficient evidence of increased lung cancer among workers in the chromate-producing industry and possibly chromium alloy workers. This determination is supported by sufficient evidence for carcinogenicity to animals and possible mutagenicity testing of Cr VI compounds.

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