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## MATERIAL SAFETY DATA SHEET

### Section 1- PRODUCT IDENTIFICATION

COMPOSITION <b>Cr</b>	PRODUCT NAME <b>Chromium</b>
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### Section 2- HAZARDOUS INGREDIENTS

Note: Products under normal conditions do not represent an inhalation, ingestion or contact health hazard.

MATERIAL OR COMPONENT	CAS NUMBER	WT%	EXPOSURE LIMITS	
			OSHA PEL (Mg/M3)	ACGIH TLV(MG/M3)
<b>Chromium</b>	<b>7440-47-3</b>	<b>100</b>	<b>1mg/m<sup>3</sup></b>	<b>0.5mg/m<sup>3</sup></b>

### Section 3- PHYSICAL DATA

MATERIAL IS (AT NORMAL CONDITIONS) <input type="checkbox"/> Liquid <input type="checkbox"/> Solid <input type="checkbox"/> Gas <input type="checkbox"/> Other	APPEARANCE AND ODOR <b>Steel-gray metallic pieces, powder &amp; flakes.          Odorless</b>
MELTING POINT (BASE METAL) <b>1857° C</b>	SPECIFIC GRAVITY <b>7.1gm/cc</b>

### Section 4- FIRE AND EXPLOSION

Flash Point (Method Used) <b>N/A</b>	Flammable Limits <b>*Non-Flammable</b>	LEL <b>N.A.</b>	UEL <b>N.A.</b>
EXTINGUISHING MEDIA <b>Powder form is combustible. Use water spray, dry chemical, CO<sup>2</sup> or sands. Class D</b>			
SPECIAL FIRED FIGHTING PROCEDURES <b>Fire may be isolated and allowed to burn itself out. When powdered, firefighters should use a self-contained breathing apparatus.</b>			
UNUSUAL FIRE AND EXPLOSION HAZARDS <b>Material may generate toxic fumes if involved in a fire. When powdered and exposed to heat or ignition sources it is a moderate fire and explosive hazard. Index of explosivity (less than 1-weak; greater than 10-severe).          *100% of dust goes through a 74-micron sieve; can be ignited by a 40-millijoule spark.</b>			

### Section 5- REACTIVITY DATA

STABILITY <b>Stable</b>	INCOMPATIBILITY (MATERIALS TO AVOID) <b>Strong oxidizers, mineral acids, ammonium nitrate, hydrogen peroxide, chlorates, BrFs, CO<sup>2</sup> and sulfur dioxide</b>
CONDITIONS TO AVOID <b>Reacts readily with dilute acids (not nitric) to form chromous salts. Powder is incompatible with strong oxidizing agents.</b>	
HAZARDOUS DECOMPOSITION PRODUCTS <b>Reaction with mineral acids may liberate hydrogen gas.</b>	

## Section 6- HEALTH HAZARD GUIDE

MAJOR EXPOSURE HAZARD

**Inhalation**  **Skin**  **Skin Absorption**  **Eye Contact**  **Ingestion**

**INHALATION:** Chromium metal is relatively nontoxic. Inhalation hazard of powders is dependent upon particle size. Chromium metal and insoluble salts are said to be involved in histological fibrosis of the lungs. When metal and insoluble is heated to a high temperature, fumes produced may be damaging to the lungs when inhaled. (Possible pneumoconiosis)

**DERMAL/EYE CONTACT:** Dusts and powder can cause eye and skin irritation Hexavalent chromium compounds are carcinogenic (OSHA) and corrosive on tissue, resulting in ulcers and dermatitis on prolonged contact. The International Agency for Research on Cancer has determined a "casual" association between occupational exposure to chromium and certain chromium compounds and cancer in humans. This determination was based on evidence where exposures were essential to hexavalent chromium compounds.

EMERGENCY & FIRST AID PROCEDURES

**INHALATION:** Remove from exposed area to fresh air. Restore and/or support breathing as required.

**INGESTION:** Give 1-2 glasses of water and induce vomiting.

**SKIN CONTACT:** Brush material off skin. Wash affected area with soap and water.

**EYE CONTACT:** Flush eyes with water lifting up the upper and lower lids for at least 15 minutes.

## Section 7- SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCUDRES

**Notify safety personnel of large spill. Remove sources of heat or ignition. Provide adequate ventilation. Keep airborne dust to a minimum using a vacuum to clean up dry spills or dust. Clean up personnel should wear protective clothing and NIOSH approved respirator. Remove spills quickly and place in appropriate containers for disposal or re-use. Take care not to raise dust.**

WASTE DISPOSAL METHODS

**May be disposed of with normal refuse.**

## Section 8- SPECIAL PROTECTION

RESPIRATORY

**NIOSH full-face respirator required for high exposure areas.**

VENTILATION

**Local exhaust is necessary to meet TLV requirements. Mechanical ventilation necessary to meet TLV requirements.**

EYE PROTECTION & PROTECTIVE CLOTHING

**Safety glasses or goggles are required. Wear neoprene gloves. Wear protective clothing appropriate for the work situation to minimize skin contact.**

## Section 9- SPECIAL PRECAUTIONS

**Store material in a cool, dry & well-ventilated area away from heat or ignition sources. Use good housecleaning practices to prevent accumulation of dust and follow cleaning techniques that will keep airborne particles at a minimum. Use non-sparking tools and ground electrical equipment and machinery. Store away from acids and oxidizing agents.**

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