

## MATERIAL SAFETY DATA SHEET

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### SECTION 1-IDENTIFICATION

Product Code: 10453 Revision Date: 12/6/88  
Product Name: Chromium crystal  
Synonyms: Chrome  
Chemical Family: Metallic element  
CASH: 7440-47-3  
Molecular Formula: Cr

### SECTION 2-INGREDIENTS

Chemical: Chromium

CASH	%	PEL	TLV
7440-47-3	100	1mg/m <sup>3</sup>	0.5mg/m <sup>3</sup>

### SECTION 3- PHYSICAL DATA

Boiling Point: 2482°C  
% Volatiles: 0  
Solubility in Water: Insoluble  
Specific Gravity (H<sub>2</sub>O=1): 7.19  
Freezing/Melting Point: 1875°C  
Evaporation Rate (butyl acetate=1): 0  
Vapor Density (air=1): Not applicable  
Vapor Pressure: 1mm @ 1616°C  
Appearance and Odor: Silver-grey in color, no odor  
Other: No data

### SECTION 4-FIRE AND EXPLOSION HAZARD DATA

Flash Point:(°F) Not applicable  
Flammable Limits in Air, % by volume: Lower Not applicable  
Upper Not applicable

Autoignition Temperature: 752°F

Extinguishing Media: Noncombustible except in powder form. Use water spray or fog, dry chemical extinguishing agents, carbon dioxide or dry sand.

Special Fire Fighting Procedures: No special firefighting procedures needed. Use normal procedures which include wearing NIOSH/MSHA approved self-contained breathing apparatus, flame and chemical resistant clothing; hats, boots and gloves. If without risk,



remove material from fire area. Cool container with water from maximum distance.

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**SECTION 5-HEALTH DATA**  
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OSHA (PEL): 1mg/m<sup>3</sup>  
 ACGIH (TLV): 0.5mg/m<sup>3</sup>

**A. ANIMAL TOXICITY**

LD<sub>50</sub>: No data  
 LC<sub>50</sub>: No data  
 Other: Intravenous-rat TDLo: 2160mg/kg/cW-I; Implant-rat TDLo: 1200mg/kg 16W-I

**B. EFFECTS OF EXPOSURE**

**ACUTE EFFECTS**

**Ingestion:** Chromium has low oral toxicity. May effect GI and urinary systems.  
**Skin Contact:** Powder or dust causes skin irritation.  
**Eye Contact:** Powder or dust causes eye irritation  
**Inhalation:** Powder or dust causes irritation to mucous membranes and upper respiratory tract. May cause fibrosis.  
**Medical Conditions, if any, Aggravated by the Chemical:** Pre-existing pulmonary diseases  
**Other Health Hazards:** None known  
**Most Likely Routes of Entry:** Ingestion, inhalation of dust or powder

**CHRONIC EFFECTS**

**Ingestion:** Stomach pains, vomiting, diarrhea, liver damage and kidney damage have been reported from prolonged exposure.  
**Skin Contact:** Prolonged exposure to some chromium compounds may result in skin sensitization.  
**Eye Contact:** None known  
**Inhalation:** Fibrosis of the lungs may develop to pneumoconiosis. There are some references to chromium causing lung cancer.  
**Other:** Chromium is considered carcinogenic by NTP and IARC. Testing was done primarily on chromium compounds. Since some compounds tested positive, all chromium containing compounds and the pure element are assumed to be potentially carcinogenic.

**C. EMERGENCY AND FIRST AID PROCEDURES**

**Ingestion:** No data available but one should obtain medical attention.  
**Skin Contact:** Remove contaminated clothing, flood skin with large amounts of water.  
**Eye Contact:** Immediately flush eyes, including under eyelids, with large amounts of water for at least 15 minutes. Call a physician.  
**Inhalation:** No specific information available, one should obtain medical attention.

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**SECTION 6-REACTIVITY**  
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**Incompatibility:** Strong acid, strong oxidizers, strong alkalies. Specific compounds include ammonium nitrate, H<sub>2</sub>O<sub>2</sub>, nitric oxide, potassium chlorate, SO<sub>2</sub>, Hg, Li

**Hazardous Decomposition Products:** Flammable H<sub>2</sub> gas, toxic fumes

**Conditions to Avoid:** Incompatibles

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

**Other:** Powdered form may react violently with strong oxidizers.

Reaction with mineral acids may evolve H<sub>2</sub> gas.

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**SECTION 7-ENVIRONMENTAL INFORMATION**  
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**RCRA Code:** D007

**TSCA Registered:** Yes

**Spill and Leak Procedures:** Wearing full protective equipment, cover spill with dry sand or vermiculite. Mix well and carefully transfer to a container.

**Waste Disposal:** Consult state, local or federal EPA regulations for proper disposal.

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**SECTION 8-PROTECTION INFORMATION**  
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**Ventilation Requirements:** Laboratory fume hood

**Respiratory Protection:** High efficiency particle respirator

**Protective Gloves:** Rubber

**Eye/Face Protection:** ANSI approved safety goggles

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**SECTION 9-SPECIAL PRECAUTIONS**  
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**Handling and Storage:** Keep container tightly closed. Store in a cool, dry, well-ventilated area. Wash thoroughly after use.

**Other Precautions:** Lab coat and apron, flame and chemical resistant coveralls, eyewash capable of sustained flushing, safety drench shower and hygienic facilities for washing.

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**SECTION 10-TRANSPORTATION INFORMATION-U.S. D.O.T.**  
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Per 49CFR 172.101

**Proper Shipping Name:** Not regulated

**Hazard Classification:** None

**UN #:** None

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**SECTION 11-COMMENTS**  
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Warning: causes pneumoconiosis, irritation

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