

MATERIAL SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION

Product Name: **Chromium Metal (99.5%) Powder**
 Product Item: 102024
 Product Code: HA2024

 Supplier: **HAI Advanced Material Specialists, Inc.**
1688 Sierra Madre Circle
Placentia, CA 92870
(714)-414-0575

 Emergency Contact: 888-255-3924
 Chemical Family: Metal
 Formula: Cr
 Molecular Weight: 51.99

SECTION 2 – HAZARDOUS INGREDIENTS

IMPORTANT! This section covers the material from which these products are manufactured. Dust and gases produced when spraying with normal use of these products are covered in Section 5.

Material or Component	CAS Number	Concentration	OSHA PEL	ACGIH TLV	Other Limits *
Chromium	7440-47-3	0.0-100.0%	1 mg/m ³	0.5 mg/m ³	NE
Material or Component	RTECS #	OSHA STEL	OSHA CEIL	ACGIH STEL	ACGIH CEIL
Chromium	GB4200000	No data	No data	No data	No data

US EPA SARA TITLE III

Material or Component	CAS Number	Sec. 302 (EHS)	Sec. 304 RQ	Sec. 313 (TRI)
Chromium	7440-47-3	No	Yes 5000 lb	Yes

SECTION 3 – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: [] Gas [] Liquid [X] Solid
Melting Point: 1,857°C (3,374.6°F)
Boiling Point: 2,672°C (4,841.6°F)
Specific gravity (water=1): 7.20 at 28.0°C (82.4°F)
Vapor pressure (mmHg): 1 at 1,616°C (2,940.8°F)
Vapor Density (Air=1): No data
Evaporation rate (Butylacetate=1): No data
Solubility in water: Insoluble
Percent volatile (vol.): N.A.
Corrosion Rate: No data
Appearance and odor: Steel Gray powder, no odor
Other: None

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash point: N/A Method Used: Unknown
Auto ignition temp.: 400.00°C (752.0°F)
Flammable limits: N/A
Explosive Limits: LEL: N/A UEL: N/A
Extinguishing Media: Class D or other suitable extinguishing agent for metal fires.
Special fire fighting procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.
Unusual fire and explosion hazards: Ignites and is potentially explosive in atmospheres of carbon dioxide.
Chromium reacts violently or explosively when heated with ammonium nitrate and bromine pentafluoride.
Chromium has an incandescent reaction with nitrogen oxide or sulfur dioxide.
Powders prepared by evaporation of mercury from chromium amalgam may be pyrophoric.

SECTION 5 – REACTIVITY DATA

Stability: Unstable [] Stable [X]
Conditions to avoid - Instability: none
Incompatibility – Materials to avoid: Strong oxidizing agents, ammonium nitrite, bromine pentafluoride and carbon dioxide.
Hazardous decomposition products: none recorded
Hazardous polymerization: Will occur [] Will not occur [X]
Conditions to avoid – Hazardous polymerization: None
Product corrosive: Yes [] No []

SECTION 6 – HEALTH HAZARD DATA

Health Hazards (Acute and Chronic)

CHROMIUM: Confirmed human carcinogen with experimental tumorigenic data. Human poison by ingestion with gastrointestinal effects. (Sax, Dangerous Properties of Industrial Materials)

Inhalation: Acute: May cause a red, dry throat.
Chronic: May cause histologic fibrosis of lungs, nasal and/or lung cancer.

Ingestion: Acute: May cause gastrointestinal disorders.
Chronic: No chronic health effects recorded.

Skin: Acute: May cause abrasive irritation.
Chronic: No chronic health effects recorded..

Eye: Acute: May cause abrasive irritation.
Chronic: No chronic health effects recorded.

Target Organs: May affect the respiratory system.

Carcinogenicity: NTP? [Yes] ARC Monographs? [Yes] OSHA Regulated? [Yes]

Carcinogenicity / other Information:

ivn-rat TDLo: 2160 ug/kg/6W-I:ETA imp-rat TDLo: 1200 ug/kg/6WI TFX:ETA orl-hmn LDLo: 71 mg/kg:GIT imp-rbt TDLo: 75 mg/kg: ETA

Recommended Exposure Limits See "Section II"

LD 50 / LC 50 See "Carcinogenicity / other Information"

Signs and Symptoms of Exposure

- Inhalation: May cause a red, dry throat, coughing and shortness of breath.
- Ingestion: May cause gastritis, convulsions, asphyxia, giddiness, nausea, diarrhea and vomiting.
- Skin: May cause redness and itching.
- Eye: May cause redness, itching and watering.

Medical Conditions Generally Aggravated by Exposure

Pre-existing respiratory disorders, pulmonary functions and asthma.

Emergency and First Aid Procedures

- Inhalation: Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.
- Ingestion: Give 1-2 glasses of milk or water and induce vomiting; seek medical attention immediately. Never induce vomiting or give anything by mouth to an unconscious person.
- Skin: Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.
- Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE/DISPOSAL

Steps to be Taken in Case Material is Released or Spilled

Wear appropriate respiratory and protective equipment specified in section VIII-control measures. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Use non-sparking tools.

Waste Disposal Method

Dispose of in accordance with local, state and federal regulations.

Hazard Label Information

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

Precautions to be Taken in Handling

None

Precautions to be Taken in Storing

None

Other Precautions

None

SECTION 8 - CONTROL MEASURES

Protective Equipment Summary - Hazard Label Information:

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

Respiratory Equipment (Specify Type)

NIOSH approved respirator

Eye Protection

Safety glasses

Protective Gloves

Rubber gloves

Other Protective Clothing

Protective gear suitable to prevent contamination

Ventilation

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

Special: None

Mechanical (Gen): Not recommended

Other: None

Work/Hygienic/Maintenance Practices

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

SECTION 9 – OTHER

Control of Substances Hazardous to Health Regulations
EH40 Occupational Exposure Limits

Maximum Exposure Limit: 0.05 mg/m3
Occupational Exposure Standard: 0.5 mg/m3

HAI Advanced Material Specialists, Inc. requests the users of this product to study this Material Safety Data Sheet (MSDS) and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify its employees, agents, and contractors of the information on this MSDS and any product hazard and safety information, (2) furnish this same information to each of its customers for the product, and (3) request such customers to notify their employees and customers for the product of the product hazards and safety information.

Company Policy or Disclaimer

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Abbreviations used: N/A=Not Applicable NE: Not Established