

## Material Safety Data Sheet

Version 4.0

Revision Date 07/21/2010

Print Date 07/28/2010

---

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Chromium

Product Number : 374849  
Brand : Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +18003255832  
Fax : +18003255052  
Emergency Phone # : (314) 776-6555

---

**2. HAZARDS IDENTIFICATION****Emergency Overview****OSHA Hazards**

Target Organ Effect

**Target Organs**

Liver, Kidney

**GHS Label elements, including precautionary statements**

Pictogram



Signal word Warning

Hazard statement(s)

H400 Very toxic to aquatic life.

Precautionary statement(s)

P273 Avoid release to the environment.

**HMIS Classification**

Health hazard: 0

Chronic Health Hazard: \*

Flammability: 0

Physical hazards: 0

**NFPA Rating**

Health hazard: 0

Fire: 0

Reactivity Hazard: 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.

**Skin** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation.

**Ingestion** May be harmful if swallowed.

---

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : Cr

Molecular Weight : 52.00 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Chromium</b>			
7440-47-3	231-157-5	-	-

#### 4. FIRST AID MEASURES

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Flush eyes with water as a precaution.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

##### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions

Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

##### Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

##### Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### 7. HANDLING AND STORAGE

##### Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

##### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

##### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Chromium	7440-47-3	TWA	1 mg/m <sup>3</sup>	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.5 mg/m <sup>3</sup>	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)

Remarks	Upper Respiratory Tract & skin irritation Not classifiable as a human carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.				
		TWA	1 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

### Personal protective equipment

#### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Eye protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin and body protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	chips
Colour	light grey

### Safety data

pH	no data available
Melting point	1,857 °C (3,375 °F) - lit.
Boiling point	2,672 °C (4,842 °F) - lit.
Flash point	not applicable
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	7.14 g/mL at 25 °C (77 °F)
Water solubility	insoluble

## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

no data available

### Materials to avoid

Strong acids, Strong oxidizing agents

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Chromium oxides

---

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

no data available

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

Carcinogenicity - rabbit - Implant

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Musculoskeletal: Tumors.

Carcinogenicity - rat - Implant

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Blood: Lymphomas including Hodgkin's disease.

Tumorigenic: Tumors at site or application.

Carcinogenicity - rat - Intravenous

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Gastrointestinal: Tumors. Blood: Lymphomas including Hodgkin's disease.

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

no data available

#### Specific target organ toxicity - single exposure (GHS)

no data available

#### Specific target organ toxicity - repeated exposure (GHS)

no data available

#### Aspiration hazard

no data available

#### Potential health effects

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Ingestion</b>	May be harmful if swallowed.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.

#### Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: GB4200000

---

**12. ECOLOGICAL INFORMATION**

**Toxicity**

Toxicity to fish	mortality NOEC - Pimephales promelas (fathead minnow) - 12 mg/l - 7 d
	mortality LOEC - Pimephales promelas (fathead minnow) - 2.4 mg/l - 7 d
	LC50 - Cyprinus carpio (Carp) - 14.3 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 0.07 mg/l - 48 h

**Persistence and degradability**

**Bioaccumulative potential**

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 30 d
	Bioconcentration factor (BCF): 1.03 - 1.22

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

no data available

---

**13. DISPOSAL CONSIDERATIONS**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

---

**14. TRANSPORT INFORMATION**

**DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

---

**15. REGULATORY INFORMATION**

**OSHA Hazards**

Target Organ Effect

**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

Chromium

CAS-No.  
7440-47-3Revision Date  
2007-07-01**SARA 311/312 Hazards**

Chronic Health Hazard

**Massachusetts Right To Know Components**

Chromium

CAS-No.  
7440-47-3Revision Date  
2007-07-01**Pennsylvania Right To Know Components**

Chromium

CAS-No.  
7440-47-3Revision Date  
2007-07-01**New Jersey Right To Know Components**

Chromium

CAS-No.  
7440-47-3Revision Date  
2007-07-01**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

---

**16. OTHER INFORMATION****Further information**

Copyright 2010 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

---