

SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: April 18, 2018

SPI Catalog # 01811-BA, 01811-CF, 01811-MB

SPI-Chem™ Chromium Chips, 99.9%

Section 1.1: Identification

Chemical Name/Synonyms Chromium

Product or Trade Name SPI-Chem™ Chromium Chips, 99.9%

CAS #'s 7440-47-3

Chemical Formula..... Cr

Section 1.2: Relevant Uses/Restrictions

Chromium metal chips for applications in electron microscopy, especially for shadow casting and coating.

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Chronic hazards to the aquatic environment (category 1)

Acute hazards to the aquatic environment (category 1)

2.2 Label elements

Pictogram



Signal Word: Warning

Hazard statements:

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:

- P101 If medical advice is needed, have product container or label at hand.
- P102 Keep out of reach of children
- P103 Read label before use
- P270 Do not eat, drink, or smoke when using this product.
- P273 Avoid release to the environment
- P391 Collect spillage
- P501 Dispose of contents and container to an approved waste disposal plant

2.3 Other Hazards: No further relevant information available.

Hazardous Material Information System USA

- Health 0
- Fire Hazard 0
- Reactivity 0
- Personal Protection

NFPA Rating (estimated)

- Health 0
- Flammability..... 0
- Reactivity 0

Section 3: Composition

3.1 Substances:

Chromium CAS # 7440-47-3 EC # 231-157-5 99.9 % RTECS # GB4200000

Section 4: First Aid Measures

4.1 Description of first aid measures:

General Information: No special measures required.

Inhalation: Supply fresh air; consult doctor in case of complaints.

Skin Contact: Immediately rinse with water.

Eye Contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

Ingestion: If symptoms persist, consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed: No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed: No further relevant information available.

Section 5: Fire Fighting Measures

5.1 Extinguishing media: CO₂, Extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture: No further relevant information available.

5.3 Advice for firefighters:

Special protective equipment and precautions for firefighters: No special measures required.

Section 6: Accidental Release Measures

6.1 Personal precautions: Not required.

6.2 Environmental precautions: Prevent from reaching drains, sewer or waterway. Should not be released into environment.

6.3 Methods and material for containment and cleaning up: Sweep up or shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections:

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Protective measures: No special measures required.

Advice on general hygiene conditions: Do not eat, drink, or smoke when using the product.

7.2 Conditions for safe storage, including any incompatibilities:

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

7.3 Specific end uses:

For applications in electron microscopy, especially for shadow casting and coating.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection:

Workplace exposure limits:

Chromium CAS # 7440-47-5

USA, Occupational Exposure Limits (OSHA): 1 mg/m³ (Table Z-1 Limits for Air Contaminants)

USA, ACGIH Threshold Limit Values (TLV): 0.5 mg/m³

Remarks: Upper Respiratory irritation, Skin irritation

California PEL: 0.5 mg/m³ (Permissible exposure limits for chemical contaminants, Table 8, Article 107).

Biological limit values: No further relevant information available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls: General industrial hygiene practice.

8.2.2 Individual protection measures:

Breathing equipment: Not required.

Protection of hands: Handle with gloves. Nitrile rubber, Minimum thickness 0.11 mm.

Eye protection: Safety glasses.

8.2.3 Environmental exposure controls: No special environmental precautions required.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance: Light gray chips

Odor: No data available

Odor threshold: No data available

pH: No data available

Melting point/Freezing point: 1857 °C (3375 °F)

Boiling point/Boiling point range: 2672 °C (4842 °F)

Flash Point: Not applicable

Evaporation rate: No data available

Flammability (solid, gas): No data available

Upper/lower flammability or explosive limits: No data available

Vapor Pressure: No data available

Vapor density: No data available

Relative density: 7.1 g/ml at 25 °C

Solubility: Insoluble

Partition coefficient (n-octanol/water): No data available

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing Properties: No data available

9.2 Other information: No data available

Section 10: Stability and Reactivity

10.1 Reactivity: No data available

10.2 Chemical Stability: Stable under recommended storage conditions.

10.3 Possibility of Hazardous Reactions: No data available

10.4 Conditions to avoid: No data available

10.5 Incompatible materials: Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions - Chromium oxides.

Section 11: Toxicological Information

Information on the likely routes of exposure:

11.1 Information on toxicological effects:

A. Acute toxicity: No data available.

B. Skin corrosion/irritation: No irritant effect.

C. Serious eye damage/irritation: No irritating effect.

D. Respiratory of skin sensitization: No sensitizing effects known.

E. Germ cell mutagenicity: No data available.

F. Carcinogenicity:

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.

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.

G. Reproductive toxicity: No data available.

H. STOT-single exposure: No data available.

I. STOT-repeated exposure: No data available.

J. Aspiration hazard: No data available.

Additional information: RTECS # GB4200000.

Section 12: Ecological Information

12.1 Toxicity: No data available.

12.2 Persistence and degradability: No data available.

12.3 Bio-accumulative potential:

Oncorhynchus mykiss (rainbow trout) – 30 d – 1.33 ug/l

Bioconcentration factor (BCF): 1.03 – 1.22

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects: No further relevant information available.

Section 13: Disposal Considerations

13.1 Waste treatment methods:

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

Contaminated Packaging: Dispose of as unused product.

Section 14: Transport Information

DOT: Not regulated.

IATA: Not regulated.

IMDG: Not regulated.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture:

U.S. Government Regulations:

SARA 302 Components:

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

SARA 313 Components:

The following components are subject to reporting levels established by SARA Title III, Section 313:

Chromium CAS # 7440-47-3 Revision Date: 2007-07-01

SARA 311/312 Hazards:

Chronic Health Hazard

State Right-to-Know Lists:

Chromium CAS # 7440-47-3 is listed on the Massachusetts, Pennsylvania, and New Jersey Right-to-Know Lists, with a Revision Date of 2007-07-01.

California Proposition 65 Components:

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

15.2 Chemical Safety Assessment: Has not been carried out.

Date of Preparation: April 18, 2018.

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
CMRG: Chemical Manufacturer's Recommended Guidelines
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulative and Toxicological
vPvB: very Persistent and very Bio-accumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety Health
ATE: Acute Toxicity Estimates
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
STEL: Short Term Exposure Limit
CEIL: Ceiling

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

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levels could have substantially different properties.