

SAFETY DATA SHEET

FERRO CHROME

C.A.S. Number: Cr-7440-47-3
Fe-7439-89-6

SECTION 1 – IDENTIFICATION

Product/Material: FE-210

Product Name: Ferro Chrome

CAS Number: Cr-7440-47-3; Fe-7439-89-6

**Manufacturer/Distributor:
Address:** Stanford Advanced Materials
23661 Birtcher Dr.,
Lake Forest, CA 92630 U.S.A.

Telephone/Fax Numbers: (949) 407-8904
(800) 424-9300

Emergency Contact: CHEMTREC (949) 407-8904
(This telephone number is available 24 hours per day, 7 days per week.)

Recommended Use:

Restrictions for Use: Commercial use only, not for human consumption.

SECTION 2 – HAZARDS IDENTIFICATION

Hazardous Classification
Per 29CFR 1910.1200
(Rev. July 1, 2012):

Skin Irritation (Category 2); Eye Irritation (Category 2B)

Specific target organ toxicity - single exposure (Category 3 - Respiratory Organs)

100% of ingredients consist of unknown acute toxicity.

Other Hazards Not Classified: Ferro Chrome powder is also considered a Combustible Dust

Signal Word: WARNING

Hazard Pictograms:



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Hazard Statements: Causes skin and eye irritation. May cause respiratory irritation.
May form combustible dust concentrations in air.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Wear protective gloves/clothing when handling material.
Do not breathe dust, fumes, mist, vapor, or contact with skin/eyes when using this product.

Response: If on skin: Wash with plenty of water. Follow by washing with soap and water. If skin irritation occurs: Get medical advice/attention. Remove contaminated clothing to wash before reuse.
If in eyes: Remove contacts and rinse cautiously with water for several minutes. Seek medical assistance if eye symptoms persist.
If inhaled: Move person to fresh air and seek medical assistance if feeling unwell.
In case of fire: Smother with dry sand or inert material suitable for Class D fires.

Storage: Store in a well-ventilated place in properly labeled, tightly sealed appropriate packaging. Prohibit access to unauthorized use. Store in a dry place.

Disposal: Dispose of contents/container in accordance with local, state and federal regulations. Avoid any release to the environment.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Formula</u>	<u>CAS #</u>	<u>Range % by Wt.</u>
Chromium	Cr	7440-47-3	> 58% and < 76%
Iron	Fe	7439-89-6	> 19% and < 43%
Carbon	C	7440-44-0	> 0.01% and < 9%
Silicon	Si	7440-21-3	> 0.01% and < 2.0%

SECTION 4 – FIRST-AID MEASURES

In Case of Inhalation: If breathed in and person has difficulty breathing or feels unwell, move person into fresh air. If symptoms persist, obtain immediate medical attention and report substance inhaled. If victim is not breathing, and if assistance is trained, administer CPR.

In Case of Skin Contact: Wash with plenty of water. Follow by washing with soap and water. If skin irritation occurs: Seek medical advice/attention. Remove contaminated clothing to wash before reuse.

In Case of Eye Contact: If wearing contacts: Remove and rinse eyes cautiously with water for several minutes. Seek medical assistance if eye symptoms persist.

In Case of Ingestion: Obtain immediate medical attention and report substance ingested. Do not give an unconscious victim anything to eat or drink, or try to induce vomiting.

Symptoms and Effects

Acute: Irritation to the skin/eyes and respiratory organs.

Chronic: ACGIH lists Cr metal as an upper respiratory tract and skin irritant.

Immediate Medical Care: Treat symptomatically.

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SECTION 5 – FIRE-FIGHTING MEASURES

- Extinguishing Media:** Smother with dry sand or inert material suitable for Class D fires. If appropriate, isolate fire and allow it to burn itself out.
- Special Hazards Arising from Substance or Mixture:** Do not use water and avoid generating powder dust. Dust clouds and fine material can burn and explode.
- Special Protective Equipment and Precautions for Firefighters:** Firefighters should wear full protective clothing and NIOSH approved self-contained breathing apparatus.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

- For Non-Emergency Personnel:** Keep unprotected people away; allow only well trained personnel wearing suitable protective clothing to respond to the incident.
- For Emergency Responders:** Avoid eye and skin contact. Do not inhale dust particles, and avoid the formation of dust.
- Methods and Materials for Containment and Cleaning Up:** Spilled material is to be collected in a mechanical manner minimizing the formation of dust, and placed into a suitable, properly labelled container for disposal. Have sand pails available. Also, during disposal wear suitable personal protective equipment.
- Environmental Precautions:** Dispose of spillage and waste (product/packaging) in accordance with all applicable environmental laws.

SECTION 7 – HANDLING AND STORAGE

- Precautions for Safe Handling:** Observe conventional hygiene precautions, and after work hours, wash hands thoroughly. Avoid direct contact with the product. Do not eat or smoke in the workplace. Ensure adequate ventilation and avoid formation of dust. Use Personal Protective Equipment as detailed in Section 8. Emptied containers may contain residues of product, which may be hazardous.
- Conditions for Safe Storage, Including Any Incompatibilities:** Keep in original, closed and labelled container. Place of storage should be properly ventilated, clean, cool and dry. Product should not be stored in the vicinity of acids, or moisture. Follow all instructions on warning labels.
- Precautions against Fire and Explosion:** Avoid flame, sparks and high heat.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

<u>Hazardous Component</u>	<u>CAS #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Chromium	7440-47-3	1.0 mg/M ³ TWA (as Cr)	0.003 mg/M ³ TWA (as Cr)
Iron	7439-89-6	15.0 mg/M ³ TWA (Total Dust)	10.0 mg/M ³ TWA (Inhalable Particles)
Carbon	7440-44-0	15.0 mg/M ³ TWA (Total Dust)	10.0 mg/M ³ TWA (Inhalable Particles)
Silicon	7440-21-3	15.0 mg/M ³ TWA (Total Dust)	10.0 mg/M ³ TWA (Inhalable Particles)

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Personal Protection Requirements

Respiratory:	NIOSH approved respirators should be used when mechanical controls are not feasible.
Hand:	Protective gloves are recommended for handling this material.
Eye:	ANSI approved eye/face protection is required when handling this material.
Other/ Clothing:	Appropriate work place clothing should be worn when handling this material.
Engineering Controls:	Local exhaust/ventilation should be used when feasible to control dust levels below acceptable occupational exposure limits.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance:	Gray to black powder
Odor:	No odor
Odor Threshold:	No data available
pH:	No data available
Melting Point:	Approx. 1649 °C
Initial Boiling Point:	No data available
Flash Point:	No data available
Evaporation Rate:	No data available
Flammability (Solid, Gas):	Combustible dust (powder only)
Lower and Upper Explosive (Flammable) Limits:	No data available
Vapor Pressure:	No data available
Vapor Density:	No data available
Specific Gravity/Relative Density:	7.20 (H ₂ O = 1)
Solubility in Water:	Insoluble
Partition Coefficient:	No data available
Auto Ignition Temperature:	No data available
Decomposition Temperature:	No data available
Viscosity:	Not applicable

SECTION 10 – STABILITY AND REACTIVITY

Reactivity:	Will react with materials identified below.
Chemical Stability:	Stable at normal temperature and general work conditions.
Possibility of Hazardous Reactions:	Reacts with acids.
Conditions to Avoid:	Avoid ignition sources, sparks, open flames, and generation of air-borne dusts.
Incompatible Materials:	Acids
Hazardous Decomposition Products:	None known

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SECTION 11 – TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation
External Exposure:	Skin/eye contact
Acute Toxicity:	None known
LD₅₀ (Inhalation-Rat):	No data available
LD₅₀ (Oral-Rat):	No data available
Skin Corrosion/Irritation:	Category 2
Serious Eye Damage/Eye Irritation:	Category 2B
Skin Sensitization:	None known
Germ Cell Mutagenicity:	None known
Carcinogenicity (IARC, NTP, OSHA, ACGIH):	ACGIH does not classify Cr metal as a human carcinogen.
Reproductive Toxicity:	None known
STOT – Single Exposure:	Category 3 – Respiratory
STOT – Repeated Exposure:	None known
Aspiration Hazard:	None known
Symptoms Related to Physical, Chemical, Toxicological Characteristics:	Irritation to the respiratory system, skin and eyes.
Delayed and Immediate Effects from Short-Term and Long-Term Exposure:	ACGIH lists Cr metal as an upper respiratory tract and skin irritant.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity:	None known
LC₅₀ (Fish):	No data available
EC₅₀ (Crustaceans):	No data available
NOEC (Algae):	No data available
Persistence and Degradability:	No data available
Bioaccumulative Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No data available

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SECTION 13 – DISPOSAL CONSIDERATIONS

Handling for Disposal: Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in Sections 7 and 8.

Methods of Disposal: Dispose of spillage and waste (product/packaging) in accordance with all local/regional national/international regulations. Waste containing chromium is considered hazardous under the RCRA criteria.

SECTION 14 – TRANSPORT INFORMATION

Proper Shipping Name: This material is not regulated by 49 CFR.

UN Number: None

Hazard Class: None

Packing Group: None

SECTION 15 – REGULATORY INFORMATION

TSCA Information: This chemical appears on the Toxic Substances Control Act (TSCA) inventory.

SARA Title III: Sec 302 Extremely Hazardous Substances, 40 CFR355: There are no extremely hazardous substances present in this material.

SARA Title III: Sec 311 and 312, SDS Requirements: This material is subject to the reporting requirements for this regulation.

Threshold Planning Quantity: 10,000 lbs.

SARA Title III: Sec 313, Toxic Chemicals Notification: This material contains 58% to 76% Chromium, a toxic chemical subject to the reporting requirements for this regulation.

SECTION 16 – OTHER INFORMATION

“Although the information and recommendations set forth herein (hereinafter “Information”) are presented in good faith and believed to be correct as of the date hereof, Stanford Advanced Materials makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Stanford Advanced Materials, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information.

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