



MATERIAL SAFETY DATA SHEET

Ferro Silicon

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: **Ferro Silicon**

Product Code: **Ferro Silicon**

Synonyms/Trade Names: inoculant, Ferro Silicon

MANUFACTURER:

ANHUI FITECH MATERIALS CO.,LTD

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2. COMPOSITION/INFORMATION ON INGREDIENTS 1

Product Identifier: Ferro Silicon

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CAS NO.: 7440-21-3(SI)

For a more detailed analysis, including other trace elements.

SI: 23.15% AL: 1.51% FE: 75.34%

2 HAZARDS IDENTIFICATION

The product does not represent a hazard to health, safety or environment when handled and stored as advised. (See Section 7). Flammable and noxious gases may be formed in contact with moisture, acids or bases. (See Sections 10 and 11). Ferro Silicon dust suspended in air may under certain conditions cause dust explosions. (See Section 10)

3. HAZARDS IDENTIFICATION (Con't)

POTENTIAL HEALTH EFFECTS:

This product contains chromium in the metallic state. The International Agency for Research on Cancer has determined that chromium and certain chromium compounds are "casually associated with cancer in humans" but "the compounds responsible for the carcinogenic effect in humans cannot be specified". This requires that chromium in all forms be identified as carcinogenic under OSHA. The American Conference of Governmental Industrial Hygienists has reviewed the available data and concluded that specific water-soluble and insoluble hexavalent chromium compounds are carcinogenic to humans. (Also see Section 11.)

NIOSH/OSHA "Guide for Chemical Hazards" conclusions are consistent with ACGIH; however, NIOSH recommended that all hexavalent chromium compounds be considered carcinogenic until proven otherwise. No recommendations have been made by ACGIH or NIOSH to include chromium metal or chromous and chromic salts as carcinogenic.

Ferro Silicon may contain small quantities of nickel. The International Agency for Research on Cancer has determined that nickel and certain nickel compounds are "probably carcinogenic to humans" but the nickel compounds responsible for the effect have not been specified. This requires that nickel in all forms be identified as carcinogenic under OSHA. The American Conference of Governmental Industrial Hygienists has reviewed the available data and concluded that not all forms of nickel are carcinogenic. The American Industrial Hygiene Association has also concluded that there is no epidemiological evidence of increased risk of respiratory cancer in the refining of oxide ores or "in any other specifically nickel occupational exposures".

4. FIRST AID MEASURES

INHALATION:

Irritation caused by dust: Fresh air. See a physician on persistent feeling of discomfort.

Phosphine/arsine intoxication: Seek medical attention. (See Section 11).

SKIN CONTACT:

Wash skin with water and/or mild detergent

EYE CONTACT:

Rinse eyes with water/saline solution. See a physician on persistent feeling of discomfort.

INGESTION:

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA:

Dry sand, CO₂ or dry powder. Dry Ferro Silicon in the form of granules is not combustible. Ferro Silicon dust suspended in air may under certain conditions cause dust explosions. (See Section 10.)

6. ACCIDENTAL RELEASE MEASURES

Avoid handling that generates dust build-up. Material in the form of dust should be collected in suitable containers. Damp product must be kept away from dry, and must not be collected and stored in closed containers. Dry dust can be vacuumed or swept up.

7. HANDLING AND STORAGE

HANDLING:

Avoid handling that generates dust build-up. Avoid inhalation of dust. (See Section 8).
Avoid ignition sources (e.g. welding) in areas with high dust concentrations. Addition of wet product to molten metal may cause explosions. (See Section 10.)

STORAGE:

Ferro Silicon must be kept in a dry and well-ventilated place, and away from acids and bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection, eye flushing facilities and protective gloves. Ensure adequate ventilation. Wear an appropriate particulate respirator in accordance with 29 CFR 1910.134 or CSA Standard Z94.4-M1982 for dust exposure that may exceed exposure limits. If exposure to phosphine and arsine is suspected (see Section 10), or if adequate ventilation is not possible then, a self-contained breathing apparatus or an air supplied respirator is recommended.

Respirable dust	5	3
Phosphine gas (PH ₃)	0.4	0.42
Arsine gas (AsH ₃)	0.2	0.16

The low occupational exposure limit for arsine gas is due to the evidence for carcinogenicity in humans of inorganic arsenic compounds in general (IARC). Exposusre levels for dust do not cover possible arsine/phosphine absorption from

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid Granules, Powder or Lump
Color:	Silvery gray, metallic surface
Odor:	Odorless
Solubility (Water):	Insoluble to slightly soluble.

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:

Avoid generating sparks and other ignition sources (e.g. welding) in areas with high dust concentrations. Ferro Silicon -particles suspended in air at concentrations

above 100-300 g/m³ can cause dust explosions. For a given particle size, the ignition sensitivity and the violence of explosion decrease with decreasing Si/Fe ratio. Addition of wet material to molten metal may cause explosions.

MATERIALS TO AVOID:

Water/humidity, acids and bases.

11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS:

INHALATION: Dust may irritate respiratory system

SKIN CONTACT: Dust may irritate the skin

EYE CONTACT: Dust may irritate and lead to dryness.

INGESTION: Dust may irritate and dehydrate mucous membranes. Possible phosphine/arsine absorption.

12. ECOLOGICAL INFORMATION

Ferro Silicon is not characterized as dangerous for the environment.

13. DISPOSAL CONSIDERATIONS

Avoid repackaging wet material in sealed containers. Dispose of in accordance with applicable federal, state, and local regulations. Ferro Silicon is not a listed RCRA Hazardous Wastes (40 CFR 261).

14. TRANSPORT INFORMATION

IMDG/IMO. no

Ferro Silicon

15. REGULATORY INFORMATION

None

16. OTHER INFORMATION

APPLICATION OF Ferro Silicon:

Additive to metal in steel plants and iron foundries for production of steel, other metals and foundry products.

Literature references are available upon request from the manufacturer.

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET RELATES TO THIS SPECIFIC MATERIAL. IT MAY NOT BE VALID FOR THIS MATERIAL IF USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. IT IS THE USER'S RESPONSIBILITY TO VERIFY THE SUITABILITY AND COMPLETENESS OF THIS INFORMATION FOR THE PARTICULAR USE INTENDED