

SAFETY DATA SHEET

Ferrosilicon

SDS

- According to GHS (Sixth Revised Edition)

Section 1 Product and Company Identification

> Product Identifier

Product Name	Ferrosilicon
Synonyms	-
CAS No.	-
EC No.	-
Molecular Formula	-

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Please consult manufacturer.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	
Application Address	
Applicant Post Code	
Applicant Telephone	+86- -
Applicant Fax	+86- -
Applicant E-mail	
Manufacturer Name	
Manufacturer Address	
Manufacturer Post Code	016064
Manufacturer Telephone	+86- -
Manufacturer Fax	+86- -
Manufacturer E-mail	

> Emergency Phone Number

Emergency Phone Number	- -
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Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the sixth revised edition):

> GHS Hazard Class

Substances And	Category 3
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Mixtures Which, In Contact With Water, Emit Flammable Gases

Acute Toxicity – Oral	Category 3
Skin Corrosion/Irritation	Category 3
Eye Damage/Irritation	Category 2B

> GHS Label Elements**Pictogram****Signal Word****Danger****> Hazard Statements**

H261	In contact with water releases flammable gas
H301	Toxic if swallowed
H316	Causes mild skin irritation
H320	Causes eye irritation

> Precautionary Statements**Prevention**

P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P231+P232	Handle and store contents under inert gas.Protect from moisture.

Response

P330	Rinse mouth.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P405	Store locked up.
P402+P404	Store in a dry place. Store in a closed container.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Section 3 Composition/Information on Ingredients

Component	Concentration (weight percent, %)	CAS No.	EC No.
Aluminium	0.01~3	7429-90-5	231-072-3
Iron	19~22	7439-89-6	231-096-4
Silicon	65~78	7440-21-3	231-130-8
Carbon	0.01~3	7440-44-0	231-153-3

Sulfur

0.001~0.4

7704-34-9

231-722-6

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Skin Contact	Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.
Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of First-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

> Most Important Symptoms and Effects, both Acute and Delayed

- 1 Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

> Indication of Any Immediate Medical Attention and Special Treatment Needed

- 1 Treat symptomatically.
- 2 Symptoms may be delayed.

Section 5 Fire Fighting Measures

> Extinguishing Media

Suitable Extinguishing Media	Dry chemical, dry sand or lime.
Unsuitable Extinguishing Media	Water spray, carbon dioxide or foam.

> Specific Hazards Arising from the Substance or Mixture

- 1 May reignite after fire is extinguished.
- 2 May react vigorously or explosively on contact with water.
- 3 May ignite on contact with air, moist air or water.
- 4 In use may form flammable/ explosive vapour-air mixtures.
- 5 May emit poisonous fumes on fire.
- 6 Containers may explode when heated.
- 7 Fire exposed containers may vent contents through pressure relief valves.
- 8 May expansion or decompose explosively when heated or involved in fire.

> Advice for Firefighters

- 1 As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
- 2 Fight fire from a safe distance, with adequate cover.
- 3 Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6 Accidental Release Measure

> Personal Precautions, Protective Equipment and Emergency Procedures

- 1 Ensure adequate ventilation. Remove all sources of ignition.
- 2 Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
- 3 Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

> Environmental Precautions

- 1 Prevent further leakage or spillage if safe to do so.
- 2 Discharge into the environment must be avoided.

> Methods and Materials for Containment and Cleaning Up

- 1 Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
- 2 Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
- 3 Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

Section 7 Handling and Storage**> Precautions for Handling**

- 1 Handle under dry inert gas.
- 2 Protect from humidity and water.
- 3 Handling is performed in a well ventilated place.
- 4 Wear suitable protective equipment.
- 5 Avoid contact with skin and eyes.
- 6 Keep away from heat/sparks/open flames/ hot surfaces.
- 7 Take precautionary measures against static discharges.

> Precautions for Storage

- 1 Store under dry inert gas.
- 2 This product is moisture sensitive, protect from humidity and water.
- 3 Keep containers tightly closed.
- 4 Keep containers in a dry, cool and well-ventilated place.
- 5 Keep away from heat/sparks/open flames/ hot surfaces.
- 6 Store away from incompatible materials and foodstuff containers.

Section 8 Exposure Controls/Personal Protection**> Control Parameters****Occupational Exposure Limit Values**

Component	Country/Region	Limit Value - Eight Hours		Limit Value - Short Term	
		ppm	mg/m ³	ppm	mg/m ³
Aluminium 7429-90-5	USA - OSHA	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-

	Denmark	-	5	-	10
	Australia	-	10	-	-
Silicon 7440-21-3	USA - OSHA	-	15	-	-
	Switzerland	-	3	-	-
	South Korea	-	10	-	-
	Ireland	-	10	-	-
	Denmark	-	10	-	20
	Australia	-	10	-	-
Sulfur 7704-34-9	Latvia	-	6	-	-

Biological Limit Values

No information available

Monitoring Methods

- 1 EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- 2 GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard).

> Engineering Controls

- 1 Ensure adequate ventilation, especially in confined areas.
- 2 Ensure that eyewash stations and safety showers are close to the workstation location.
- 3 Use explosion-proof electrical/ventilating/lighting/equipment.
- 4 Set up emergency exit and necessary risk-elimination area.

> Personal Protection Equipment

Eye Protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand Protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and Body Protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

Section 9 Physical and Chemical Properties

Appearance: Gray block solid	Odor: No information available
Odor Threshold: No information available	pH: No information available
Melting Point/Freezing Point (°C): No information available	Initial Boiling Point and Boiling Range (°C): > 35
Flash Point (°C)(Closed Cup): Not applicable	Evaporation Rate: Not applicable
Flammability: Not combustible	Upper/lower explosive limits[%(v/v)]: Upper limit : No information available ; Lower limit : No information available
Vapor Pressure (MPa): Not applicable	Relative Vapour Density(Air = 1): Not applicable
Relative Density(Water=1): No information available	Solubility: No information available
n-Octanol/Water Partition Coefficient: No information available	Auto-Ignition Temperature(°C): No information available
Decomposition Temperature (°C): No information available	Kinematic Viscosity (mm²/s): Not applicable
Particle characteristics: No information available	

Section 10 Stability and Reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical Stability	Stable under proper operation and storage conditions.
Possibility of Hazardous Reactions	Ultrafine powder will self-ignite in the air at room temperature. Reacts severely with halogens, interhalogens or other strong oxidants, or causes a fire. Mixtures with metallic acetylene, when heated, cause a fire or incandescence.
Conditions to Avoid	Incompatible materials, heat, flame and spark.
Incompatible Materials	Oxidants, halogen, interhalogen and mercury. Halogen, interhalogen, strong oxidant, water and acids. Metal acetylide, halogen, interhalogen, halogen oxides, nitric acid, nitrous oxide, nitrates, nitrites, halogen oxyacid salts, chromates, permanganates, inorganic peroxides, metal oxides and peroxyformic acid.
Hazardous Decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11 Toxicological Information

> Acute Toxicity

Component	CAS No.	LD ₅₀ (Oral)	LD ₅₀ (Dermal)	LC ₅₀ (Inhalation, 4h)
Silicon	7440-21-3	3160mg/kg(Rat)	No information available	No information available
Sulfur	7704-34-9	>3000mg/kg(Rat)	No information available	No information available
Iron	7439-89-6	30000mg/kg(Rat)	No information available	No information available

> Skin Corrosion/Irritation

Causes mild skin irritation(Category 3)

> Serious Eye Damage/Irritation

Causes eye irritation(Category 2B)

> Skin Sensitization

No information available

> Respiratory Sensitization

No information available

> Germ Cell Mutagenicity

No information available

> Carcinogenicity

ID	CAS No.	Component	IARC	NTP
1	7429-90-5	Aluminium	Not Listed	Not Listed
2	7439-89-6	Iron	Not Listed	Not Listed
3	7440-21-3	Silicon	Not Listed	Not Listed
4	7440-44-0	Carbon	Not Listed	Not Listed
5	7704-34-9	Sulfur	Not Listed	Not Listed

> Reproductive Toxicity

No information available

> Reproductive Toxicity (Additional)

No information available

> STOT-Single Exposure

Causes mild skin irritation(Category 3)

> STOT-Repeated Exposure

No information available

> Aspiration Hazard

No information available

Section 12 Ecological Information

> Acute Aquatic Toxicity

Component	CAS No.	Fish	Crustaceans	Algae
Aluminium	7429-90-5	LC ₅₀ : 1.55mg/L (96h)(Fish)	No information available	No information available
Iron	7439-89-6	LC ₅₀ : 1.29mg/L (96h)(Fish)	No information available	No information available

> Chronic Aquatic Toxicity

No information available

> Others

Persistence and Degradability
Bioaccumulative Potential
Mobility in Soil

No information available

No information available

No information available

Results of PBT and vPvB Assessment

Aluminium does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Iron does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Silicon does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

Carbon does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.
Sulfur does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

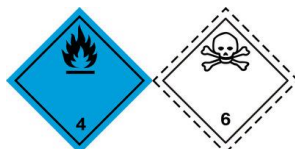
Section 13 Disposal Considerations

Waste Chemicals Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.

Contaminated Packaging Disposal Recommendations Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible. Refer to section 13.1 and 13.2.

Section 14 Transport Information

Transporting Label



Marine pollutant

None

UN Number

1408

UN Proper Shipping Name

FERROSILICON with 30% or more but less than 90% silicon

Transport Hazard Class

4.3

Transport Subsidiary Hazard Class

6.1

Packing Group

III

Section 15 Regulatory Information

> International Chemical Inventory

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Aluminium	✓	✓	✓	✓	✓	✓	✓	✓	✗
Iron	✓	✓	✓	✓	✓	✓	✓	✓	✗
Silicon	✓	✓	✓	✓	✓	✓	✓	✓	✗
Carbon	✓	✓	✓	✓	✓	✓	✓	✓	✗
Sulfur	✓	✓	✓	✓	✓	✓	✓	✓	✗

【EINECS】 European Inventory of Existing Commercial Chemical Substances.

【TSCA】 United States Toxic Substances Control Act Inventory.

【DSL】 Canadian Domestic Substances List.

【IECSC】 China Inventory of Existing Chemical Substances.

【NZIoC】 New Zealand Inventory of Chemicals.

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances.

【KECI】 Existing and Evaluated Chemical Substances.

【AICS】 Australia Inventory of Chemical Substances.

【ENCS】 Existing And New Chemical Substances.

Note

"√" Indicates that the substance included in the regulations

"x" That no data or included in the regulations

Section 16 Additional Information

Creation Date	2017/07/24
Revision Date	2017/07/24
Reason for Revision	-

> Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 6th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user' s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.