

## 1. Product and Company Identification

### 1.1. Product : Special Steel (Carbon Steel, Carbon-Manganese Steel, Alloy Steel)

Semi-finished product : Ingots, Blooms, Billets / Rolled Bar(square bars, round bars, wire rod) / Forged bar

### 1.2. Product use and Restrictions on use

Product use : Automobile, Industrial machinery, construction & heavy machinery, shipbuilding, etc

Restrictions on use : Unknown

### 1.3. Supplier Information

Manufacturer : SeAH Besteel Corp.

Address : Gunsan Plant : 522, Oehang-ro, Gunsan-si, Jellabuk-do, Korea  
 Changnyeong Plant : 100, Daehapsaneopdanji-ro, Daehap-myeon, Changnyeong-gun, Gyeongsangnam-do, Korea

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Website : www.seahbesteel.co.kr

## 2. Hazards Identification

### 2.1. Classification of the substance or mixture

Appearance and Odour	: Brown. Solid. Odourless
Health Hazards	: Dropping under the skin may cause serious damage
Safety Hazards	: Not classified as flammable but dusty rust will burn in high pressure and temperature

**Physical hazard** : Not an explosive under normal conditions

**Health hazard** : Not expected to be a health hazard when used under normal conditions, but be carefully to treat because of heavy.

Inhalation : Under normal conditions of use, this is not expected to be a primary route of exposure. But rust powder may cause damage to respiratory system.

Skin contact : Prolonged or repeated skin contact without proper personal protection may cause skin rash.

Eye contact : Rust powder may slightly cause irritation to eyes.

Ingestion : Harmful if swallowed the rust powder

**Environmental hazard** : Not classified as dangerous for the environment.

**Other information** : Under normal conditions of use or in a foreseeable emergency,

this product does not meet the definition of a hazardous chemical when evaluated according to related standards/regulations.

## 2.2. Label elements

Pictogram

Signal word : WARNING



## 2.3. Hazard statements and Precautionary statements

Be careful for scratch from steel wire, band and product ends

Be careful when products are dropped by torn packing

## 2.4. Degree of other hazards that does not contain classification of hazard (NFPA(a) )

recording each ingredient-specific data because of no data under NFPA codes and standards

Parts	Fe	Si	Mn	Ni	Cr
Health	1	0	1	Not available	1
Flammability	3	0	3	Not available	3
Instability	0	0	1	Not available	0

(a) NFPA : National fire protection association

## 3. Composition/Information on Ingredients

### 3.1. Substances

Ingredients	Synonyms	CAS No.	Concentration(%)
Iron(Fe)	Iron chloride, Ferrous chloride	7439-89-6	83% Min
Silicon(Si)	elemental Silicon	7440-21-3	2.0% Max
Manganese(Mn)	manganese	7439-96-5	1.9% Max
Nickel(Ni)	Nickel	7440-02-0	4.3% Max
Chromium metal(Cr)	Chrome, Chromium	7440-47-3	12.5% Max
Others	-	-	0.0 ~17.0%

3.2. Products may be contained other minor ingredients.

3.3. This product is solid. There is no hazards of exposure to chemical ingredients under normal conditions. but in liquid phase.

## 4. First-aid measures

### 4.1 General Information

Not expected to be a health hazard when used under normal conditions.

**4.2. If inhaled**

No treatment necessary under normal conditions of use. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, obtain medical attention.

**4.3. In case of eye contact**

If in eyes, rinse cautiously with copious quantities of water for several minutes. If persistent irritation occurs, obtain medical attention.

**4.4. In case of skin contact**

If skin irritation occurs, remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, get medical attention. When injuries by dropping heavy product under the skin, send immediately to a hospital. Obtain medical attention even in the absence of apparent wounds.

**4.5. If swallowed**

In general no treatment is necessary unless large quantities are swallowed, however, if you feel unwell, rinse the mouth with water and call a physician.

**4.6. Advice to physician**

Treat symptomatically. Injuries caused by collision with product require emergency treatment, to minimise tissue damage and loss of function.

**5. Explosion/Fire-fighting measures****5.1. Suitable(UnInappropriate) extinguishing media**

Suitable extinguishing media

Foam, Water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : N/A

**5.2. Special hazards arising from the substance or mixture**

Heating may cause irritating and harmful gases.

Heating may cause a fire or explosion of container.

May be partially burned, but it is difficult to ignite.

Substances are not flammable themselves, but heating may cause a corrosion/toxicity/fume.

Mist/fume may be formed explosive mixtures by reaction with air.

**5.3. Precautions for fire-fighting or personal safety protection**

If possible, keep away from any hazard area, and fight fire remotely. Wear proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

**6. Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Avoid breathing dust/fume/gas/mist/vapours/spray and contacting with skin and eyes.  
 People who do not wear protective equipment or a relationship is not allowed.  
 Do not touch damaged container or spilled substances, if not wearing protective equipment.

### 6.2. Environment precautions

Prevent the contaminants from spreading or entering supply/drains/cellar/confined area by using the apparatus.

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

Prevent from spreading by making collecting vessel. And collect the spilled scrap/chip.

### 6.4. Additional advice

For guidance on selection of personal protective equipment see Chapter 8 of this material Safety data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

Local authorities should be advised if significant spillages cannot be contained.

## 7. Handling and storage

### 7.1. General precautions

Use local exhaust ventilation if there is risk of inhalation of vapours, mist. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

### 7.2. Precautions for safe handling

Avoid prolonged or repeated contact with skin. Avoid inhaling rust powder and/or mists  
 When handling product in process, safety footwear should be worn and proper handling equipment be used. Wash thoroughly hadling area, after handling.

### 7.3. Conditions for safe storage

Maintain air gap between stacks/pallets. Store in a dry place in order to prevent rust.  
 Do not pile up excessively in order to prevent from dropping by torn packing.

### 7.4. Specific end uses/Additional information

Wear the protective equipment and take safety measures before handling product such as cutting/machining.

## 8. Exposure controls and personal protection

### 8.1. Control Parameters for chemical substances (exposure limits, biological exposure limits, etc)

※ Recording the each ingredient-specific data because of having no data about exposure and biological exposure limits.

#### a) Occupational Exposure Limits

Material	Source	Type	ppm	mg/m <sup>3</sup>	
Iron(Fe)	ACGIH	N/A	N/A	N/A	
Silicon	ACGIH	TWA	N/A	N/A	
Manganese	ACGIH	TWA	N/A	0.2mg/m <sup>3</sup>	

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Nikel	ACGIH	TWA	N/A	1.5mg/m <sup>3</sup>		
	ACGIH	TWA	N/A	0.1mg/m <sup>3</sup>	soluble inorganic compounds	
	ACGIH	TWA	N/A	0.2mg/m <sup>3</sup>	insoluble inorganic compounds	
Chroum	ACGIH	TWA	N/A	0.5mg/m <sup>3</sup>		

- ACGIH : American Conference of Governmental Industrial Hygienists

- TWA : Time-Weighted Average

b) Biological Exposure Limits : No data

### 8.2. Exposure controls

The level of protection and types of controls necessary will vary depending on potential exposure conditions. Select controls based on a risk assessment of local circumstances.

If mist or fume is generated, ventilate locally, keep below the permissible limit.

### 8.3. Personal Protection

a) Personal protective equipment

Personal protective equipment should meet the recommended national standards. Check with personal protective equipment supplier.

b) Respiratory protection

No respiratory protection is ordinarily required under normal conditions of use.

In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of materials. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers.

c) Eyes protection

Wear safety glasses or full face shield if rust powder/chip are likely to occur.

d) Hands protection

Where hand contact with the product may occur the use of gloves approved to relevant standards. Contaminated gloves should be replaced. After using gloves, hands should be washed.

e) Skin and Body protection

Wear the proper protective clothing.

f) Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the workplace may be required to confirm compliance with adequacy of exposure controls.

g) Environmental exposure controls

Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

a) Appearance Form : Brown(metallic gray). Solid

b) Odour and odour threshold : Data not available

c) pH : Data not available

- d) Melting/freezing point : 1535°C
- e) Initial boiling point and boiling range : 2750°C
- f) Flash point : Data not available
- g) Evaporation rate : Data not available
- h) Flammability(solid, vapour) : Data not available
- i) Upper/lower limits of flammability or explosive : N/A
- j) Vapour pressure : 1 mmHg at 1,787°C
- k) Vapour density : None
- l) Relative density : 7.86 (Water=1)
- m) Water solubility : Insoluble
- n) n-octanol/water partition coefficient N : Data not available
- o) autoignition temperature : Data not available
- p) Decomposition temperature : Data not available
- q) Kinematic viscosity : Data not available
- r) Explosive properties : Data not available
- s) Oxidizing properties : Data not available

## 10. Stability and reactivity

- a) Reactivity and chemical stability : stable
- b) Possibility of hazardous reactions : Data not available
- c) Conditions to avoid : friction, heating, spark, flame
- d) Incompatible materials : water
- e) Hazardous decomposition products : Hazardous decomposition products are not expected to form during normal storage

## 11. Toxicological information

### 11.1. Information on toxicological effects : Data not available

Information given is based on data on the components and the toxicology of similar products.

### 11.2. Health hazards information

※ Recording the each ingredient-specific data because of having no data about product

- a) Acute Oral toxicity : Expected to be of low toxicity

Fe : LD50 984 mg/kg Rat	Si : LD50 3160 mg/kg Rat
Mn : LD50 9000 mg/kg Rat	Ni : Data not available
Cr : Data not available	

- b) Acute Dermal toxicity : Expected to be of low toxicity

Fe : LD50 20000 mg/kg Guinea pig	Si : Data not available
Mn : Data not available	Ni : Data not available
Cr : Data not available	

c) Acute Inhalation toxicity : Not considered to be an inhalation hazard under normal conditions of use.

Fe : Data not available	Si : hamster/8mg/m3/No effects (IUCLID)
Mn : Data not available	Ni : Data not available
Cr : Data not available	

- d) Skin Irritation : Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as acne.
- e) Eye Irritation : Expected to be slightly irritation.
- f) Respiratory Irritation : Inhalation of rust powder may cause irritation.
- g) Sensitisation : Not expected to be a skin sensitiser.
- h) Repeated Dose Toxicity : Not expected to be a hazard.
- i) Mutagenicity : Not considered a mutagenic hazard.
- j) Carcinogenicity : Product is not classified as carcinogenic by the International Agency for Research on Cancer
- k) Reproductive Toxicity : Not expected to be a hazard.
- l) Specific target organ toxicity [single exposure(GHS)] : Not expected to be a hazard.
- m) Specific target organ toxicity [repeated exposure(GHS)] : Not expected to be a hazard.
- n) Additional Information : Used products may harmful impurities that have accumulated during use. All used product should be handled with caution and skin contact avoided as far as possible.

## 12. Ecological information

Ecotoxicological data have not been determined specifically for this product.

- 12.1. Toxicity** : Poorly soluble compounds. Expected to be practically non toxic to aquatic organisms.
- 12.2. Mobility** : Solid under most environmental conditions. Sink under water. If it enters soil, it will not be mobile.
- 12.3 Persistence/degradability** : Expected to be not readily biodegradable. The product contains components that may persist in the environment
- 12.4 Bioaccumulation** : Not expected to be bioaccumulated.
- 12.5 Other Adverse Effects** : Product is a compounds of non-volatile components. Which are not expected to be released to air in any significant quantities.

## 13. Disposal considerations

**13.1. Material Disposal** : Recycle if possible. Do not dispose into the environment, in drains or in water courses.

**13.2. Waste treatment method** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

## 14. Transport information

**14.1. This material is not subject to DOT regulations under 48 CFR.**

**14.2 This material is not classified as dangerous under IMDG regulations.**

**14.3 This material is classified as dangerous under IATA regulations.**

UN Number(ADR/RID, IMDG, IATA)	: Not applicable
UN proper shipping name	: Not applicable
Transport hazard class	: Not applicable
Packaging group	: Not applicable
Environment hazards	: Not applicable

**14.4 Special precautions for users**

Emergency measures in fire	: Not applicable
Emergency measures in the spill	: Not applicable

## 15. Regulatory information

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

Occupational Safety and Health Act	: Managed harmful substance
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**15.2. Chemical Safety Assessment**

Toxic Chemicals Control Act	: Not applicable
Act on registration, Evaluation, etc. of chemicals	: Not applicable
Safety Control of Dangerous Substances Act	: Not applicable
Waste Control Act	: Not applicable

**15.3. Others**

### National regulations

Persistent Organic Pollutants Control Act

### Foreign regulations

CLP Regulation : European Regulation(EC) No 1272/2008

GHS : Globally Harmonized System of Classification and Labelling of Chemicals

OSHA regulations(standards 26CFR)

CERCLA regulations(Comprehensive Environmental Response, Compensation, and Liability Act)

## 16. Other information



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**Reference**

**Others**

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