

Material Safety Data Sheet

[This sheet was made by Industrial Safety and Health Act, Article 41, in Korea]

Cold Rolled Steel Sheet(CR)



1. Chemical Product and Company Identification

A. Product Name : Cold Rolled Steel Sheet

B. Recommended Use of Product and restrictions on use

Recommended Use of Product : Home appliance, Furniture, Car etc.

restrictions on use : None

C. Manufacturer / Supplier / Distributor Information

Name: KG Steel

Address : 1228, Bukbusaneom-ro, Songak-Eup, Dangjin-Si, Chungnam province,
343-823, Korea

Emergency phone number : +82-41-351-8527 / +82-41-351-8115

2. Hazards Identification

A. Hazard. Risk Classification

B. Label elements including precautionary statements

Symbol : N/A

Signal Word : N/A

Hazard-Risk Statement : N/A

Precautionary Statement

Prevention : N/A

Response : N/A

Storage : N/A

Disposal : N/A

C. Other Hazard. Risk which are not included in the classification criteria

Health : 2

Fire : N/A

Reaction : N/A

3. Composition/Information on ingredients

Ingredient Name	Other Name	CAS Number	Percentage
Iron	Ferrium	7439-89-6	Max 98.5%

※ C, Si, Mn, Al and Ti may be added in minor amounts during manufacturing

※ This product is solid finished product. There is no possibility of exposure to chemicals contained in the product. It may be partially exposed in the melting state such as cutting, melting etc.

4. First aid measures

A. Eye contact

Rinse cautiously with water for several minutes.

Get medical advice/attention

B. Skin contact

Rinse cautiously with water for several minutes

Take off immediately all contaminated clothing

Wash it before reuse

Get medical advice/attention

C. Inhalation

Get medical advice/attention

Remove person to fresh air

If not breathing, give artificial respiration.

If breathing is difficult, give oxygen

D. Ingestion

To an unconscious person, do not feed anything with your mouth

Get medical advice/attention

E. Doctor's notes

Have healthcare worker know about the material and take protective measures

Do not take adrenaline

5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media

Small fire : Dry sand, Dry chemical, Alcohol-resistant foam, Water spray, Normal foam,
CO₂ (Suitable extinguishing media)

Large fire : Water spray/ Fog, Normal foam (Suitable extinguish media)

Pulsed infusion(Improper extinguishing media)

B. Specific hazards arising from the chemical

- Can be ignited by heat, spark, flame
- Some can burn, but not easily ignite
- May cause irritation and poisonous gas in case of fire
- Inhalation of the substance may be harmful

C. Special protective equipment and precautions for fire-fighters

Move container from fire area if it is not hazardous.

If it is impossible to extinguish the fire, protect the surroundings and let the fire extinguish itself.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

- Remove all ignition sources
- Note the substances and conditions to avoid
- Isolate the contaminated area
- Do not touch or walk with exposed material
- Avoid dust formation

B. Environmental precautions and protective procedures

Prevent entry into waterways, sewers

C. Methods and materials for containment and cleaning up

- In case of small leakage, wash contaminated area with large amount of water
- In case of small leakage, place it in a plastic

7. Handling and storage

A. Precautions for safe handling

- Note the substances and conditions to avoid
- Wash thoroughly after handling
- Refer to engineering controls and personal protective equipment
- Be careful of high temperatures

B. Conditions for safe storage

- Store in a cool, dry place
- Note the substances and conditions to avoid

8. Exposure controls & personal protection

A. Control parameters

Domestic regulations : TWA – 1mg/m³

ACGIH regulations : N/A

Biological exposure standard : N/A

B. Appropriate engineering controls

Use process isolation, local exhaust, or keep air level below exposure standard

C. Personal protective equipment

Respiratory protection

Wear a respirator protection that is certified by the Korean Occupational Safety and Health Administration in accordance with the physicochemical properties of the substance being exposed.

If the exposure concentration is lower than 10mg/m³, wear a half-face respirator with an appropriate type of filter.

If the exposure concentration is lower than 25mg/m³, wear a loose-fitting hood type/helmet type electric breathing apparatus or continuous flow type dust mask with an appropriate type of filter.

If the exposure concentration is lower than 50mg/m³, wear a full-face or Powered type half-face or air-supplied and continuous-flow type/pressure-demand type half-face respiratory with an appropriate type of filter.

If the exposure concentration is lower than 1000mg/m³, wear a full-face or helmet/hood type, Pressure-demanded ventilation mask with an appropriate type of filter.

If the exposure concentration is lower than 10000mg/m³, wear a SCBA or SCBA respiratory with an appropriate type of filter.

Eye protection

Use chemical protective eyewear and protective face

Install eyewash station and emergency shower near work area

Hands protection

Wear suitable chemical resistant gloves

Body protection

Wear suitable chemical resistant clothing

9. Physical and chemical properties

A. Appearance

Appearance : Solid

Colour : White or Gray

B. Odour : N/A

C. Odour threshold : N/A

D. pH : N/A

E. Melting point/freezing point : 1535 °C

F. Initial boiling point and boiling range : 2750 °C

G. Flash point : None

H. Evaporation rate : None

I. Flammability(solid, gas) : None

J. Upper/lower flammability or explosive limits : None

K. Vapour pressure : 1 mmHg (at 1787°C)

L. Solubility : (Water solubility: Insolubility. Solvent availability : availability : acid.

Insolubility : alkali, Alcohol, ether)

M. Vapor density : None

N. Specific gravity: 7.86 ((water=1))

O. N-octanol/water Partition coefficient : None

P. Auto-ignition temperature : None

Q. Decomposition temperature : None

R. Viscosity : None

S. Molecular weight : 55.85

10. Stability and reactivity

A. Chemical stability and possibility of hazardous reactions

Can be ignited by friction, heat, spark, flame.

Can be re-ignited after extinguish the fire.

Some materials burn with intense heat.

Dust and fumes may form explosive mixtures with air.

May cause irritating, corrosive and toxic gases in case of fire.

Inhalation and contact with vapors, substances, and decomposition products may result in serious injury or death.

When metal fire, Oxides show serious health hazards.

B. Conditions to avoid : Friction, heat, spark, flame heat

C. Incompatible materials : water

D. Hazardous decomposition products : Irritant, corrosive, toxic gas

11. Toxicological information

A. Information on the likely routes of exposure

N/A

Can be absorbed into the body by inhalation

Can be absorbed into the body by digestive system

Through the skin, digestive system, can be absorbed into the body by inhalation of aerosol

Can be absorbed into the body by inhalation of vapor

Can be absorbed by inhalation, skin and digestive system

B. Health hazards information

Acute toxic

Oral : LD50 98600 mg/kg (OECD TG 401 male)

Dermal : LD50 20000 mg/kg Guinea pig

Inhalation : Dust LC50 > 100 mg/m³ 6hr Rat (Not applicable to classification due to lack of reliability of data such as mouse, hamster and guinea pig)

Skin corrosive/irritant : As a result of skin damage / irritat test for rabbits,
no stimulation OECD TG 404

Serious eye damage/eye irritation : As a result of Eye damage / irritat test for rabbits,
no stimulation OECD TG 405

Respiratory sensitization : N/A

Skin sensitization : As a result of skin damage / irritat test for guinea pig, all oxidized steel materials are non-sensitizing.

Similar materials : 1309-37-1, 1317-61-9, 1310-14-1

Carcinogenicity

Industrial Safety and Health Act : N/A

Ministry of Labor examination : N/A

IARC : N/A

OSHA : N/A

ACGIH : N/A

NTP : N/A

EU CLP : N/A

Germ cell Mutagenicity : As a result of gene mutation tests using in vitro cultured mammalian cells, carbonyl iron is positive and electrolytic iron is negative OECD TG 476

Germ cell toxicity : N/A

Specific target organ toxicity(Single exposure) : N/A

Specific target organ toxicity(Repeated exposure) : As a result of Oral Target Organ Systemic Toxicity Test for rats, there is effect on liver. As a result of inhalation target organ systemic toxicity test for rats, NOAEC = 5mg/m³

Aspiration hazard : N/A

Other harmful effects : N/A

12. Ministry of Labor examination

A. Ecotoxicity

Fish : LC50 13.6 mg/ℓ 96 hr (Danio rerio, LC0, 96h, >100,000mg/L, Similar substance : 51274-00-1, OECD Guideline 203, Brachydanio rerio , LL0, LC50, 96h, >10,000mg/L, Similar substance : 1317-61-9

Crustacea : EC50 > 100 mg/ℓ 48hr Daphnia magna
(Similar substance CAS No. 1309-37-1 OECD TG 202)

Algae : N/A

B. Persistence and degradability

Persistence : N/A

Degradability : N/A

C. Bioaccumulative potential

Accumulation : N/A

Biodegradable : N/A

D. Mobility in soil : N/A

E. Other adverse effects : N/A

13. Disposal considerations

A. Disposal method

Use one of the following methods.

1. Solidify

2. Land a designated waste in a managed landfill.

3. Incinerate spent catalysts containing flammable materials.

4. Incinerate spent catalysts containing Halogen in high temperature.

B. Disposal precaution

If specified in the Waste Management Act, consider the precautions specified in the regulations.

14. Transport information

A. UN Number UN No. : 3089

B. UN proper shipping name : Metal powder (Flammable)(Except that the name of the product is specified) METAL POWDER, FLAMMABLE, N.O.S

C. Transport hazard : 4.1

D. Packing group : II

E. Environmental hazards : N/A

F. Special precaution which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.

Emergency measures in case of fire F-G

Emergency measures in case of leak S-G

15. Regulatory information

- A. Industrial Safety and Health Act : Management Target Toxic Substance
Exposure Standard Setting Substance
- B. Toxic Chemical Control Act : N/A
- C. Dangerous Material Safety Control Act : Category 2 iron content 500kg
- D. Wastes Management Act : Designated waste
- E. Other requirements in domestic and other countries
 - Domestic regulation
 - Residual Organic Pollutant Control Act : N/A
 - Foreign regulation
 - US Administration Information(OSHA Rule : N/A
 - US Administration Information(CERCLA Rule) : N/A
 - US Administration Information (EPCRA 302 Rule) : N/A
 - US Administration Information (EPCRA 304 Rule) : N/A
 - US Administration Information (EPCRA 313 Rule) : N/A
 - US Administration Information (Rotterdam Convention material) : N/A
 - US Administration Information (Stockholm Convention substance) : N/A
 - US Administration Information (Montreal Protocol substance) : N/A
 - EU Classification information (Confirmed classification result) : N/A
 - EU Classification information (Risk phrases) : N/A
 - EU Classification information (Safety phrases) : N/A

16. Other information

- A. Source of material
 - HSDB (Appearance)
 - HSDB (Colour)
 - HSDB (E. Melting point/Freezing point)
 - HSDB (F. Initial boiling point and boiling range)
 - HSDB (K. Vapour pressure)
 - ICSC (L. Solubility)
 - ICSC (M. Specific gravity)

PUBCHEM (P. Molecular weight)
ECHA (Oral)
ECHA (Dermal)
ECHA (Skin corrosion or irritation)
ECHA (Serious eye damage or irritation)
ECHA (Skin sensitization)
CHA (Germ cell mutagenicity)
(Reproductive toxicity)
ECHA (Specific target organ toxicity (Repeated exposure))
ECHA (Fish)
ECHA (Crustacean)
ECHA (D. Mobility in soil)

B. Issuing date : 2008.04

C. Revision number : 4 Times

D. Revision number : 2020.04.03

E. Others

This information is based on the industrial Safety and Health Act and the knowledge and related materials to date. However, the risk of hazardous substances is not written to all the risks of hazardous substances exist there may be unknown hazards of all chemicals in this material may be prescribed. Therefore, our customers and potential customers should review this information and precaution, look precautions carefully and verify suitability about applicable laws and regulations related to the use and disposal of this product.

This information is intended solely for the purpose of describing the health, safety and environmental requirements of the product handler and should not be construed as an endorsement of the characteristics or quality of the product.

Please understand that it is the sole responsibility of the user to evaluate the final suitability of the product, as it is impossible to control the actual application of this product. It is necessary to establish appropriate safety measures in accordance with the application and usage in case of special handling.

This document can be revised based on the new information.