

1 Product Identification and Company Information

【Product Identification】

Various metallic products (Forged-, HIPed- [Hot Isostatic Pressed-], 3D-Printed-, or otherwise wrought- metallic materials which we cut to required dimensions, and cold-drawn bars)

【Company Information】

Name : Shimoda Iron Works Co., Ltd. (シモダフランジ株式会社)
 Address : 250 Ryusen-cho, Aioi City, Hyogo, Japan
 Liaison : Takeshi Shimoda (Management Representative of ISO 14001)
 Tel : +81 791-22-2211
 Fax : +81 791-22-2216

2 Hazards Identification

No hazards are reported until now, provided the products are used in general environment.

If they are welded, flame/plasma cut, or ground, whereby the fine particles are generated, any damage may be acutely incurred on eyes, respiratory organs, or mucous membranes.

If fine particles are generated, or corrosion or abrasion are occurred by hot or acid environment, natural impurities (generally, industrial metals contain 1~3%) or alloying elements may elute to be polluted area year by year. In such the case, chronic toxicosis may be incurred.

Usually, metallic products with volume are not chemical substances so SDS is not required. But the steel maker's SDS for alloying elements may be attached if they are possible to be hazardous.

See Table 1 for the hazardous in general use.

Table 1. Hazardous (According to GHS Classification)

	Hazardous	Category	Remarks
Physicochemical hazards	Combustible solid	2	For fine particles
Health Hazards	Eye irritation	2B	For fine particles
	Respiratory sensitization	1B	For fine particles
	Skin sensitization	1B	Metal allergy
Environmental Hazards	Aquatic environmental hazards	No classified	

S D S No.	Rev.	Page
SFS-SDS-24-001 (E)	0	2 / 7

【GHS Label Elements】



【Signal Word】

Warning: if fine particles are generated, or corrosion or abrasion are occurred by hot or acid environment

As per steel maker's SDS: if alloying elements are possible to be hazardous

【Hazard Statement】

- Do not handle until all safety precautions have been read and understood. (P202)
- Do not breathe dust/fume/gas/mist/vapours/spray. (P260)
- Wash hands thoroughly after handling. (P264)
- Do not eat, drink or smoke when using this product. (P270)
- Contaminated work clothing should not be allowed out of the workplace. (P272)
- Wash contaminated clothing before reuse. (P363)
- Wear protective gloves/protective clothing/eye protection/face protection. (P280)
- Wear respiratory protection (when ventilation is insufficient) (P284)
- Avoid release to the environment. (P273)

3 Composition and Ingredients Information

For chemical composition, refer to applicable material specification. Generally, the natural impurities in Table 2 are identified as hazardous elements.

Table 2. Hazardous Elements in Natural Impurities

Hazardous Element [RCC: Related Chemical Compounds]	Standard Content in Soil (For Information) (mg/kg)	Remarks
Cadmium (Cd)	Max. 45	No content is reported for specific lot because the products are industrially mass-produced.
Hexavalent chromium and RCC (Cr[VI])	Max. 250	
Mercury and RCC (Hg)	Max. 15	
Selenium and RCC (Se)	Max. 150	
Lead and RCC (Pb)	Max. 150	
Arsenic and RCC (As)	Max. 150	
fluorine and RCC (F)	Max. 4000	
Boron and RCC (B)	Max. 4000	

S D S No.	Rev.	Page
SFS-SDS-24-001 (E)	0	3 / 7

4 First-aid Measures

If fine particles are generated, or corrosion or abrasion are occurred by hot or acid environment:

- If inhaled
 - Remove person to fresh air and keep comfortable for breathing.
 - Call a Poison Center/Doctor/Physician if you feel unwell.
- If on skin (or hair)
 - Wash with plenty of soap and water.
 - If skin irritation occurs: Get medical advice/attention.
- If in eyes
 - Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - If eye irritation persists: Get medical advice/attention.
- If swallowed
 - Rinse your mouth. Call a Poison Center/Doctor/Physician if you feel unwell.
 - ※If swallow a solid, immediately get medical advice/attention.
- Protective equipment needed for emergency measure
 - Helper shall wear rubber gloves and sealed goggles.

5 Fire-fighting Measures

If fine particles are generated:

- Fire extinguisher
 - Any extinguisher suitable for surrounding facilities shall be employed.
- Specific hazards
 - Irritative, poisonous, and/or corrosive gas may be generated upon combustion.
 - Dust explosion may be occurred.
- Advice for fire-fighters
 - Evacuate people to safety zone.
- Protective equipment needed for fire-fighting
 - Fire-fighter shall wear protective gloves/clothes/goggles/face shield.

6 Accidental Release Measures

If fine particles are generated, or corrosion or abrasion are occurred by hot or acid environment:

- Personnel precautions, protective equipment and emergency procedures
 - Keep people away.
 - Wear proper protective equipment.
- Environmental precautions
 - Keep spill from entering to water source, river, lake, sea, or groundwater. Do not wash down the fine particles to sewer or any drain line. That may cause dust explosion.

S D S No.	Rev.	Page
SFS-SDS-24-001 (E)	0	4 / 7

- **Methods and materials for containment and cleaning up**
 - If the polluted area of hazardous elements is found, terminate the utilization immediately and remove it by physical method.
 - For long time keeping, the products shall be kept in such a place difficult to rust that are free from acid/alkaline substances including rain water.
 - If the fine particles are usually generated by routine welding or like, a closed space with exhaust apparatus shall be provided in accordance with applicable Health, Safety & Environment (HSE) laws and regulations.
 - The fine particles shall be collected into a container, and closed afterwards.
- **Preventive measures for secondary accident**
 - If lots of the fine particles are kept by necessity, prepare the fire extinguishers to its combustion potential.
 - Keep such the space free from all of ignition sources (smoking, spark, flame and etc.).
 - Prevent the fine particles entering to drain line, sewer, underground room, or any closed spaces.

7 Handlin, Storage, and Disposal

If fine particles are generated, or corrosion or abrasion are occurred by hot or acid environment:

- **Technical Measures**
 - If the fine particles are kept by necessity and its total weight is more than 1/5 of Fire-Protection-Law-based storage limit, refer to Fire Protection laws and regulations.
 - If they are welded, flame/plasma cut, or ground, whereby the fine particles are generated, refer to HSE laws and regulations to secure the safe work space including protective equipment.
 - If the fine particles are usually generated by routine welding or like, a closed space with exhaust apparatus shall be provided.
- **Caution**
 - If the fine particles are usually generated, prevent piling up.
- **Safety Measures**
 - Wear the suitable protective equipment.
 - Wash hands and contaminated parts thoroughly after handling.
 - Contaminated work clothing should not be allowed out of the workplace.

For both fine particles and solids:

- **Incompatibilities and Safety Storage Conditions**
 - The products shall be kept in such a place difficult to rust that are free from acid/alkaline substances.
 - Prevent the products corroded or embrittled by attaching to any different metal (especially, low melting metals).
 - Keep the fine particles in the closed container to prevent any chemical reaction with different substances. Such the container shall be at the cool place outside the sun.
 - Keep the fine particles away from all of ignition sources (heater, spark, flame, high temperature)

SDS No.	Rev.	Page
SFS-SDS-24-001 (E)	0	5 / 7

– including smoking.

- Disposal

Recycle is desirable. Landfill disposal is not always possible depending on the composition.

8 Exposure Controls and Personal Protection

- Control parameters

No data available.

- Exposure controls

—Facilities—

Exhaust: Exhauster should be available.

Hand/face wash: Washing facilities should be available.

—Protective equipment—

If the fine particles are generated, wear the following protective equipment in accordance with HSE laws and regulations.

(a) Respiratory protection • • • Dust mask or like

(b) Hand protection • • • Leather/rubber glove or like

(c) Eye protection • • • Safety goggles

—Sanitary measures—

Wash hands thoroughly after handling.

9 Physical and Chemical Properties

Basic physical and chemical properties:

【Physical state】

Physical state: Solid (or fine particles depending on handling)

Color: Metallic glossy color

Odor: None

Density (g/cm³) : Fe-alloy /7.8 Al-alloy/2.7 Ni-alloy/8.9

※These data may vary depending on its composition.

Flammability: Nonflammable (but the fine particles are flammable)

【Physical change】

Melting/Solidifying Point: Fe-alloy/1540 Al-alloy/660 Ni-alloy/1450

※These data may vary depending on its composition.

Solubility to Water: Insoluble

SDS No.	Rev.	Page
SFS-SDS-24-001 (E)	0	6 / 7

11 Toxicological Information

This product has not been subjected to toxicological tests because it has not been considered as chemical substance.

Information on toxicological effects

- Acute toxicity: No data available
- Local effect: No data available
- Sensitization: No data available
- Germ-cell mutagenicity: No data available
- Carcinogenicity: No data available
- Teratogenicity: No data available
- Reproductive toxicity: No data available
- Specific target organ toxicity (STOT): No data available
- Aspiration respiratory hazard: No data available

12 Ecological Information

Ecotoxicity

- Aquatic toxicity: No data available
- Persistence and degradability: No data available
- Bioaccumulative potential: No data available
- Mobility in soil: No data available
- Ozon depleting substance: No data available

14 Transport Information

Suitable rust prevention and packing should be made on the products to prevent any corrosive deterioration.

15 Regulatory Information

- Poisonous and Deleterious Substances Control Law
Not applicable.
- Industrial Safety and Health Act
Not applicable except when any processing work generates fine particles, it shall be in accordance with the applicable regulations.
- Law for Promotion of Chemical Management (PRTR)
Refer to steel maker's SDS if applicable.
- Fire Services Act
Not applicable except fine particles shall be considered as hazardous material category II, combustible solid.
- Chemical Substance Control Law
Refer to steel maker's SDS if applicable.

SDS No.	Rev.	Page
SFS-SDS-24-001 (E)	0	7 / 7

- Water Pollution Control Act
 - [RCC: Related Chemical Compounds]
 - 44 Aluminum and RCC
 - 45 Nickel and RCC
 - 46 Molybdenum and RCC
 - 50 Chromium and RCC (except hexavalent chromium and RCC)
 - 51 Manganese and RCC
 - 52 Iron and RCC
 - 53 Copper and RCC
 - 54 Zinc and RCC (only for galvanized products)

16 Other Information

【References】

- GHS conformable guidelines for preparing label, marking, and safety data sheet (Japan Chemical Industry Association [JCIA])
- GHS conformable system to provide labels and SDS appropriate to Law for Promotion of Chemical Management and Industrial Safety and Health Act (Ministry of Economy, Trade and Industry [METI])
- GHS Mixture Classification and Labels Creation System (METI)
- Website of Japanese Society of Occupational Health (JSOH)
- Workspace safety (Ministry of Health, Labour and Welfare [MHLW])
- Website of National Institute of Technology and Evaluation (NITE)
- JIS Z 7253 Hazard Communication of Chemicals Based on GHS—Labelling and Safety Data Sheet (SDS)

Please note that this document does not include any information found after the issue, so it may be revised at the discretion of us. In addition, these cautions are based only on general use, so additional safety measures may be needed for special use.

The data herein is based on the latest information and experiences at the issue. Even if this SDS provides the safety information to control the applicable products, no data herein assures/warrants the performance and safety of the products.