

Safety Data Sheet

Prepared on: Sep. 1, 2014

1. Product and company identification

Product name: Hot-rolled steel product, ASTM A615/A615M

Company name: Jonan Steel Corporation

Address: 13-35, 5-chome, Ryoke, Kawaguchi-city, Saitama-prefecture

Department in charge: Quality Assurance Department

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2. Hazards Identification

GHS classification:

Not applicable.

Other hazards:

In general environments, the product is stable in a solid state and has no physical or chemical hazards, health hazards, or environmental hazards. Since it is heavy, however, care should be given to falling, rolling, load collapse, etc. The cut end surface of the steel product or scraps of steel, etc. may cause injury to the skin. Fumes caused by welding and fusing and fine particles produced by grinding may irritate the mucosa of the respiratory apparatus, eyes, etc., and arcs may cause burns.

3. Composition, Ingredient Information

Composition, principal components of mixture (alloy)

Component	Concentration (%)	CAS No.	Industrial Safety and Health Law No.
Iron (Fe)	Remnant	7439-89-6	-
Manganese (Mn)	2.00 or lower	7439-96-5	550
Copper (Cu)	1.00 or lower	7440-50-8	379
Nickel (Ni)	0.60 or lower	7440-02-0	418
Chromium (Cr)	1.00 or lower	7440-47-3	142

CAS: Chemical Abstracts Service (chemical substance registration system)

Industrial Safety and Health Law No.: Article 18-2, Appendix 9 of the Industrial Safety and Health Law

The concentration of components differs within the above range according to the specification and type of product. In addition to the above components, the product contains a trace amount of elements such as silicon, phosphorus, and sulfur.

4. First Aid Measures

Under normal conditions, the product is solid and situations such as inhalation, skin contact, and eye contact do not occur; however, during processing, which includes welding, fusing, and grinding of the product, situations that include the inhalation of fumes or dust, and eye contact with dust may occur. In addition, arcs generated during welding may cause burns.

In such cases, consult a doctor as needed following first aid measures. The following are examples of first aid measures:

Inhalation: If fumes, dust, etc., are inhaled, move to an area with fresh air and rest in a posture in which it is comfortable to breathe.

Skin contact: If the skin comes into contact with fumes, dust, etc., quickly wash the affected areas with water and soap.

Eye contact: If the eyes come into contact with fumes, dust, etc., quickly wash the affected areas with water.

Ingestion: If fumes, dust, etc., are inhaled, ingest plenty of water and rinse the mouth.

Other: If burned by arcs, etc., cool the affected area.

Other: If the skin is cut, etc., wash the wound.

Acute and late symptoms to be expected:

Inhalation: Cough

Eye contact: Red-eye

Most important signs and symptoms: Cough, red-eye

Protection for individuals taking first aid measures: No data

Special notes for physicians: No data

5. Fire-fighting Measures

Under normal conditions, the product is solid, incombustible, and poses no problem when using extinguishers and water on any surrounding fire.

Extinguishing media: No particular restraints.

Specific hazards: No data

Protection for fire-fighters: When fire-fighting work is being performed, use appropriate protective equipment such as protective clothing and air respirators.

6. Accidental Release Measures

In general environments, the product is solid and does not leak.

Personal precautions: Use appropriate protective equipment to prevent fumes and dust from being inhaled and coming into contact with the eyes.

Environmental precautions: Quickly collect dust produced by processing methods such as cutting and grinding.

Method and equipment for collection, neutralization, containment, and cleanup: It is preferable to collect fumes, dust, etc. produced during processing such as welding, fusing, and grinding with a vacuum cleaner.

7. Handling and storage

Handling

Engineering measures: When fumes, dust, etc. are produced during processing of the product, such as through welding, fusing, or grinding, wear appropriate protective equipment to prevent inhalation and contact with the eyes and skin.

Local and overall ventilation: When fumes, dust, etc. are produced during processing, through welding, fusing, or grinding of the product, conduct necessary local and overall ventilation.

Safe handling precautions: Since the product is heavy, care should be given to falling, load collapse, and dropping.

Since the cut end of the product or cut waste may cause injury to the skin due to contact, care should be given, such as through the use of protective gloves. Wash hands after handling.

Storage

Engineering measures: Care should be given to natural lighting, illumination, and ventilation required for storage and handling in storage areas.

Rust may be generated by dew condensation, etc.

Storage conditions: Avoid contact with moisture, acid, alkali or materials that contain them.

Avoid sudden temperature changes, and environments with high temperatures or humidity.

If necessary, cover and wrap the product with sheets, etc. to prevent penetration by rain water and for rust prevention.

8. Exposure Control and Personal Protection

Under normal conditions, the product is solid and there is no useful information at present about exposure control and personal protection. However, during processing such as welding, fusing, or grinding, use a mask, glasses, gloves, clothing, etc. to prevent fumes, dust, etc. from being inhaled and coming into contact with the eyes and skin, and to protect oneself from welding arcs.

Take appropriate ventilation measures to protect the environment.

Protective equipment for the respiratory apparatus: Wear an appropriate respirator.

Protective equipment for the hands: Wear appropriate protective gloves (cloth, leather, etc.)

Protective equipment for the eyes: Wear appropriate safety glasses. When fumes, dust, etc., fly or spread and may come into contact with the eyes and face, wear chemical splash goggles and a face shield.

Protective equipment for the skin and body: Wear protective equipment such as protective clothing and safety shoes.

9. Physical and Chemical Properties

Physical state, shape, color, etc.: Solid under general environments. Oxide layer (black)

Odor: None.

pH: No data.

Melting point, freezing point: 1500-1535°C

Boiling point, initial boiling point and boiling range: No data.

Flash point: Incombustible.

Upper and lower limits of combustible or explosive range: Incombustible.

Vapor pressure: Not applicable.

Vapor density: Not applicable.

Specific gravity (relative density): Approximately 7.85 g/cm³.

Solubility: Insoluble in water

Distribution coefficient in n-octanol/water: Not applicable.

Spontaneous ignition temperature: Incombustible.

Decomposition temperature: No data.

Evaporation rate: Not applicable.

Flammability: Incombustible.

Powder produced through processing may ignite and explode.

Viscosity: No data.

10. Stability and Reactivity

Stability: Stable in general environments.

Hazardous reactivity: Contact with a chemical substance such as a strong acid may produce hazardous gas.

Conditions to avoid: Environments with high temperature and humidity. Contact with hazardous substances.

Hazardous substances: Strong acids and strong alkalis.

Hazardous decomposition product: fumes, etc. produced through processing methods such as welding, fusing, or grinding.

11. Toxicological Information

Toxicological information about the product:

There is no chemical or toxicological information about the following hazards caused by contact with the product:

Acute toxicity

Skin corrosion and skin irritation

Serious eye damage or eye irritation

Respiratory apparatus sensitizing and skin sensitizing

Reproductive cell mutagenicity

Carcinogen

Reproductive toxicity

Toxicity to specific target organ (single exposure, repetitive exposure)

Aspiration respiratory apparatus hazards

Toxicological information about components:

The product is a mixture (alloy) and stable in general environments. Some of the alloy components are indicated to be hazardous as a single element; for example, when fumes, dust, etc. produced through processing methods, such as welding, fusing, or grinding, exceed the concentration (threshold limit value).

Toxicological information can be obtained from the following home page of the Japan Advanced Information Center of Safety and Health:

http://anzeninfo.mhlw.go.jp/user/anzen/kag/kagaku_index.html

12. Ecological information

There is no ecological information about the following hazards of the product:

Biological toxicity

Residual properties and degradability

Bioaccumulation

Mobility in soil

Hazards to the ozone layer

13. Disposal considerations

Dispose of the product by an appropriate eco-friendly method according to the Waste Disposal and Public Cleaning Law and related regulations; for example, recycling as scrap iron. (For example, separate the product from waste other than iron.)

14. Transport information

There are no precautions as a hazardous material. The product is not subject to international transport regulations.

Since the product is heavy, take care to prevent load collapse.

Cover the product with sheets, etc. to prevent penetration by rain water.

15. Applicable laws

Industrial Safety and Health Law

Pollutant Release and Transfer Register (PRTR)

16. Other information

This Material Safety Data Sheet has been prepared according to the Japanese Industrial Standards Z 7250: 2010 [Material Safety Data Sheet (MSDS) Part 1: Order of contents and items].

As “references” to ensure safe handling of the product, this offers information that was available at the time of preparation, but does not guarantee safety of the product. You need to take appropriate measures for handling on your own responsibility in reference to this.

There may be hazards that are not covered in this data sheet, and about which we do not know.

The end