

Material Safety Data Sheet (MSDS)

Date Printed: 17/09/2008

Date Update: 17/09/2008

Version: 2.0

Reference: 91/155/EEC

1 – Product and Company Information

Product name	1. Hot rolled coil 2. Checker plate 3. Hot rolled coil with pickled and oiled.
Company identification name	Sahaviriya steel industries public co., ltd 9 M. 7 T.Maerumphueng A.Bangsaphan Prachuabkirikhan 77140
Division in charge	Metallurgy and Quality assurance Department
Technical phone	(66-32) 691403-5 Ext. 5010
Fax	(66-32) 691408

2 – Composition/Information on Ingredients

Base metal

Ingredient name	Formula	CAS No.	Percentage by weight.
Iron	Fe	7439-89-6	> 95.0

Alloying element

Ingredient name	Formula	CAS No.	Percentage by weight.
Carbon	C	7440-44-0	1.0 max
Copper	Cu	7440-50-8	1.0 max
Silicon	Si	7440-21-3	1.0 max
Sulfur	S	7704-34-9	0.5 max
Phosphorus	P	8049-19-2	0.5 max
Manganese	Mn	7439-96-5	2.0 max
Corrosion-inhibiting oil	-	64742-47-8, 64741-97-5	1800-3600 mg/m ²

Note:

- Hot rolled coil with pickled and oiled surface shall be coated with small amounts (1800-3600 mg/m²) of corrosion inhibiting oil.
- All commercial steel products may contain small amounts of various elements in to those specified. These small quantities (less than 0.1%) may exist as intentional additions, or as "residual" elements that generally original in the raw materials used. These elements may include: Aluminum, Antimony, Arsenic, Boron, Cadmium, Calcium, Chromium, Cobalt, Columbium, Lead, Molybdenum, Nickel, Silicon, Tin, Titanium, Vanadium and Zirconium
- This product has no heavy metal component as RoHS and ELV directive by sampling

3 – Hazards Identification

This product in solid state at normal condition has no hazard. When product is subjected to welding, burning, melting, sawing, grinding, or similar process, particles and fumes may be generated. Keep

avoiding inhalation of metal particles and fumes. This operation having the potential to generate airborne particulates and should be performed in well ventilated areas and, if appropriate, respiratory protection and other personal protective equipment shall be used. In case of slit process the sharp remnant of iron may be generated cause of the accident to stab or cut and are dangerous to the staff. Corrosion inhibiting oil may be has healthy hazard if pass through the internal organ by swallowing.

4 – First Aid Measures

This product in solid state at normal condition has no fire hazard. When product is subjected to welding, burning, melting, sawing, grinding, or similar process, particles and fumes may be generated.

After inhalation	Remove exposed person to fresh air. Consult doctor if feeling unwell.
After skin contact	Wash off with plenty of water and remove contaminated clothing. Consult doctor if feeling unwell.
After eye contact	For corrosion inhibiting oil, rinse out with plenty of water with the eyelid held wide open. Consult doctor if feeling unwell. For the eyes contact with particles to consult doctor.
After swallowing	Not probable route of industrial exposure, however, if ingested, seek medical attention immediately.
After cutting	Wash off with plenty of water. Consult doctor if feeling unwell or do not have the vaccine of tetanus.

5 – Fire – Fighting Measures

Burning

This product in solid state at normal condition has no fire hazard. However this product can be melt When processed by high temperature condition at melting point.

Fire – fighting equipment	Wear a self-contained breathing apparatus with a full face piece operated in pressure-demand or positive pressure mode and full protective clothing and can use the dry chemical, CO ₂ , Halonite, FM200.
----------------------------------	--

6 – Accidental Release Measure

Procedure(s) of personal precaution(s)

Not applicable to steel in solid state at normal condition. When product is subjected to welding, burning, melting, sawing, grinding, or similar process, particles and fumes may be generated. For spills or spread involving finely divided particles may be easily dispersing to the environment. Please carefully the transporting. For operation which is accordingly the personal protective equipment shall

be used. Beside, the corrosion inhabiting oil on the hot rolled coil surface you can not discard to the public ditch.

7- Handling and Storage

<u>Handling</u>	To carefully move the product with safety practice, do not collide with people or matter and the personal protective equipment shall be properly used when you touch the hot rolled coil.
<u>Storage</u>	Avoid unnecessary contact with water or high humidity environment, oxidizing agents and serious product keep in indoor yard.

8 – Exposure Controls / Personal Protection

When product is subjected to welding, burning, melting, sawing, grinding, or similar process, particles and fumes may be generated, where the above conditions operating, the following equipment should be applied.

Personal protective equipment

Hand protection	Protective gloves
Skin protection	Work clothes
Eye protection	Safety goggles
Respiratory protection	Wear dust mask

9 – Physical and Chemical Composition

Appearance

Hot rolled coil	Solid with metal black color
Hot rolled coil with pickled and oiled	Solid and metal gray with corrosion inhibiting oil coating
Checker plate	Solid and metal black color with pattern
Melting point range	1510°C-1540°C
Boiling point	-
Density	7.85 g/cm ³
Specific gravity	7.85
pH	-
Viscosity	-

10 – Stability and Reactivity

Condition of instability	Steel products are stable under normal storage and handling condition. However, rust may appear if the product contact with water, oxidizing agents, strong acids, calcium hypochlorite or store at high humidity environment.
Materials and chemical to avoid	Water, oxidizing agents, strong acids, calcium hypochlorite

11 – Toxicological Information

No information is available for the product. For the best of our knowledge, the chemical, physical, and toxicology properties have not been thoroughly investigated. When product is subjected to welding, burning, melting, sawing, grinding, or similar process, particles and fumes may be generated.

Eye effect eye contact with the individual components may cause particulate irritation. Implantation of iron particles in guinea pig corneas have resulted in rust rings with corneal softening about rust ring.

Skin effect Skin contact with individual particles components may cause physical abrasion, irritation, dermatitis, and sensitization.

Acute inhalation effects Inhalation of the individual alloy components has been shown to cause various respiratory effects.

Acute oral effect As below table

Item	Element	Detail
1	Iron	LD50:30g/kg oral (rat).
2	Calcium	LD 50: No data
3	Carbon	LD50: No data
4	Copper	TD _{Lo} : 120ug/kg oral (human)
5	Manganese	LD50:9g/kg oral (rat)
6	Phosphorous	LD50: No data
7	Silicon	LD50: 3160mg/kg oral (rat)
8	Sulfur	LD50: 78437mg/kg oral (rat)

Reference: See RTECS (NO4565500) for additional toxicity data on iron, (CEV 8040000) for calcium, (FF5250100) for carbon, (GL5325000) for copper, (OO9275000) for manganese, (VW0400000) for silicon, (WS4250000) for sulfur.

12 – Ecological Information

No data available.

13 – Disposal Consideration

Steel scrap should be recovered for use or recycling whenever possible. Basically, disposal is entrusted to legally approved industries waste management contractors.

14 – Transport Information

No data available. (This product is not specified in hazard substance act of Thailand, which is identify the transportation method)

15 – Regulatory Information

This product and or its constituents are subjected to the following main regulation.

ROHS: The product as whole and components of this product are not listed.

ELV: The product as whole and components of this product are not listed

GADSL: The product as a whole is not listed but individual components of the product are listed.

However, two components are listed. They are lightly value and not exceed the limit value. They are intentionally added in product for improving the properties of product as international standard.

16 – Other Information

The purpose of this document shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Company shall not be liable for any damage resulting from handling or from contract with the above product.