

## Safety Data Sheet - BRS Steel Coils

### 1. IDENTIFICATION

**Name:** Steel Coils

**CAS Number:** N/A

**Other Names:** Hot Rolled (HR), Hot Roll Pickle (HRPO), Cold Roll Full Hard (CRFH), Cold Roll Fully Processed (CRFP), Galvanized (GI)

**Usage:** Steel Fabricated Parts

**Contact Info:**

24 Hour Contact – CHEMTREC @ 1-800-424-9300

08:00am – 05:00pm Contact – Safety Officer – Robert Carter @ 1-870- 819-3031

### 2. HAZARDS IDENTIFICATION

**Emergency Overview**

As originally manufactured, this solid metal product poses little or no immediate health or fire hazard. When this product goes through further processing such as welding, burning, melting, sawing, brazing, grinding, or other similar processes, potentially hazardous airborne particulates and fumes may be generated.

**OSHA Hazards**

Carcinogen

Skin Sensitizer

Target Organ Effect – Lungs

**GHS Classification**

Carcinogenicity (Category 2)

Skin Sensitization (Category 1)

Specific Target Organ Toxicity – Repeated Exposure (Category 1)

**Signal Word**

Danger

**Hazard Statements**

H317: Dust and fumes may cause an allergic skin reaction

H351: Dust and fumes suspected of causing cancer via inhalation

H372: Inhalation of dust and fumes causes damage to respiratory tract through prolonged or repeated exposure

**Pictograms(s)**



**Precautionary Statements**

P202: Read all safety precautions before handling.

P261: Avoid breathing dust and fumes.

P281: Always use personal protective equipment as required.

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P308+P313: If exposed or concerned, seek medical advice/attention.

### 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS No.	% Wt	Exposure Limits			
			ACGIH TLV (mg/m <sup>3</sup> )		OSHA PEL (mg/m <sup>3</sup> )	
Iron (Fe)	7439-89-6	Balance	5	Oxide Dust/Fume	10	Oxide Dust/Fume
<b>Alloying Elements:</b>						
Aluminum (Al)	7429-90-5	0-0.08	10 5	Metal Dust Welding Fume	15 5	Total Dust Respirable Fraction <sup>3</sup>
Antimony (Sb)	7440-36-0	<0.1	0.5	As Antimony	0.5	As Antimony
Arsenic (As)	7440-38-2	<0.01	0.01	As Arsenic (A1 Carcinogen)	0.01	As Arsenic
Beryllium (Be)	7440-41-7	<0.01	0.002 0.01	As Beryllium (A1 Carcinogen) As Beryllium (STEL <sup>4</sup> )	0.002 0.005	As Beryllium As Beryllium (Ceiling <sup>5</sup> )
Boron (B)	7440-42-8	0-0.02	10	Oxide Dust	15	Oxide Dust
Cadmium (Cd)	7440-43-9	<0.01	0.01 0.002	As Cadmium (A2 Carcinogen) Respirable Fraction	0.005 0.0025	As Cadmium As Cadmium (Action Level)
Calcium (Ca)	1305-78-8	0-0.1	2	Oxide Dust	5	Oxide Dust
Carbon (C)	7440-44-0	0.04- 0.95	10 3	Inhalable Fraction (PNOS) <sup>6</sup> Respirable fraction (PNOS)	15 5	Total Dust (PNOR) <sup>7</sup> Total Dust (PNOR)
Chromium (Cr)	7440-47-3	0.01-1	0.5	Metal	1	Metal
Cobalt (Co)	7440-48-4	<0.01	0.02	As Cobalt (A3 Carcinogen)	0.1	Metal/Dust/Fume
Copper (Cu)	7440-50-8	0.04-1	1 0.2	Dust Fume	1 0.1	Dust Fume
Lead (Pb)	7439-92-1	<0.1	0.05	Dust/Fume (A3 Carcinogen)	0.05	Dust/Fume
Magnesium (Mg)	7439-95-4	<1.0		Not Established		Not Established
Manganese (Mn)	7439-96-5	0-3.0	0.2	Elemental Mn and Inorg Cmpds	5	Fume (Ceiling)
Molybdenum (Mo)	7439-98-7	0.01-0.8	10	Insoluble Compounds	15	Insoluble Compounds
Niobium (Nb)	7440-03-1	0-1		Not Established		
Nickel (Ni)	7440-02-0	0.01-1	1.5	Metal	1	Metal and Insoluble Compounds
Nitrogen (N)	7727-37-9	<0.03		Simple Asphyxiate		Simple Asphyxiate
Phosphorous (P)	7723-14-0	0-1	0.1	Phosphorous	0.1	Phosphorous
Selenium (Se)	7782-49-2	<0.01	0.2	Selenium	0.2	Selenium
Silicon (Si)	7440-21-3	0-2.0	10	Dust	15	Dust
Sulfur (S)	7446-09-05	<0.04	5.2 13	Sulfur Dioxide Sulfur Dioxide (STEL)	13	Sulfur Dioxide
Tin (Sn)	7723-14-0	<0.05	2	Metal, Oxide and Inorganic Compounds	2	Inorganic Compounds
Titanium (Ti)	7440-32-6	0-1	10	Titanium Dioxide	15 5	Total Dust (PNOR) Total Dust (PNOR)
Tungsten (W)	7440-33-7	0-1	5 10	Insoluble Cmpds as W Insoluble Cmpds as W (STEL)		Not Established
Vanadium (V)	7440-62-2	0-1	0.05	Oxide Dust/Fume	0.5 0.1	Oxide Dust (Ceiling) Oxide Fume (Ceiling)
Zinc (Zn)	7440-66-6	<0.01	10 5 10	Oxide Dust Oxide Fume Oxide Fume (STEL)	5 10	Oxide Fume Oxide Dust

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Components	CAS No.	% Wt	Exposure Limits			
			ACGIH TLV (mg/m³)		OSHA PEL (mg/m³)	
Coating and Finishing Treatments:						
Hydrochloric Acid (HCl)	7647-01-0	<3				
Petroleum, natural, or synthetic oils	Mixture	<0.1	5	Mist	5	Mist
Anhydrous Potassium Hydroxide	1310-58-3	<0.01	2	Ceiling	2	Ceiling
Glycine,nn-1, 2-ethanediylbis	60-00-4	<0.01				
Polyalkylene glycol	Mixture	<0.01				
Sodium Nitrite	7632-00-0	<0.01				
Zinc (galvanized/galvanneal)	7440-66-6	0.1-10	10 5 10	Oxide Dust Oxide Fume Oxide Fume (STEL)	10 5	Oxide Dust Oxide Fume
Note: No permissible exposure limit (PEL) or short term exposure limit (STEL) exist for steel. The above is a listing of the elements that could be present in Big River Steel products and combinations may vary depending on the grade of steel and/or trace minerals. Exact composition of specific grades can be made upon request.						

## 4. FIRST AID MEASURES

### Eye Contact

In the event of over exposure to dusts or fumes, immediately flush eyes with water for a minimum of fifteen (15) minutes, periodically rinsing under the eyelids. Seek medical attention if irritation develops or persists. Thermal burns should be treated as medical emergencies.

### Skin Contact

In the event of overexposure to dusts or particles, wash with soap and water. Seek medical attention if irritation develops or persists. If thermal burn occurs, rinse area with cold water and seek immediate medical attention.

### Inhalation

In the event of overexposure to dusts or fumes, move into open / fresh air. Seek immediate medical attention if symptoms occur as defined in this document.

### Ingestion

As manufactured, this product is not considered an ingestion hazard. If large amounts of dust or particles are ingested, treat symptoms and seek medical attention.

**Note to Physician:** Inhalation of metal fume or metal oxides may produce an acute febrile state with cough, chills, weakness and general malaise along with nausea, vomiting, muscle cramps, and leukocytosis. This is often referred to as "metal fume fever." Treatment is symptomatic and condition is self-limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis or mixed type.

## 5. FIRE FIGHTING MEASURES

### Flash Point and Flammable Limits

Not applicable

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### Extinguishing Media

For molten metal, use sand or dry powder.

For steel dust, use sand, water, foam, argon or nitrogen.

### Special Fire Fighting Procedures

Do not use water on molten metal.

Do not use Carbon Dioxide (CO<sub>2</sub>).

Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full-face mask and full protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions if Material is Spilled or Released

Emergency response is not necessary unless in the form of combustible dust. Avoid contact and breathing of dusts by using appropriate personal protective equipment defined in this document. Small particles, pieces and shavings should be swept or vacuumed and disposed of appropriately. Keep fine dust or powder away from sources of ignition. Always recycle.

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Coatings can make material slippery. Avoid contact with sharp edges and hot surfaces. Use appropriate personal protective equipment such as gloves and tools to ensure safe handling. Use work methods that minimize dust and fumes. Do not breathe dusts or fumes. Follow all recommendations in ANSI Z49.1, Safety in Welding and Cutting. Always practice good industrial hygiene.

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Exposure Guidelines

No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. See Section 3 for component materials. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts.

- Eye Protection - Always wear safety glasses; wear face shield when grinding, cutting or welding.
- Skin - Always wear appropriate gloves. Good personal hygiene practices should be followed to avoid skin irritation.
- Respiratory Protection - NIOSH/MSHA approved dust/fume/mist respirator may be used to avoid excessive exposure. Follow all applicable respirator use, fitting, and training standards and regulations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Silver grey to grey black with metallic luster

### Odor

No odor

### pH

Not applicable

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### Freezing Point

Not applicable

### Melting Point

Approximately 2800 degrees F (1537 degrees C)

### Boiling Point

Not applicable

### Flash Point

Not applicable

### Evaporation Rate (Butyl Acetate = 1)

Not applicable

### Vapor Pressure and Density (air = 1)

Not applicable

### Specific Gravity (at 15.6 degree C)

Not applicable

### Density (at 15.6 degree C)

Not applicable

### Solubility in Water

Insoluble

### % Volatile, by Volume

Not applicable

### Other Physical and Chemical Data

None

## 10. STABILITY AND REACTIVITY

### Stability

Stable

### Hazardous Reactions

Will not occur

### Conditions to Avoid

Temperatures above melting point may create fumes containing oxides of iron and alloying elements

### Incompatible Materials

Strong acids to form hydrogen gas; strong oxidizers

### Hazardous Decomposition Products

Metallic fumes can be produced during welding, burning, grinding, and possibly machining or any situation with the potential for thermal decomposition. Refer to ANSI Z49.1

## 11. TOXICOLOGICAL INFO

Under normal conditions of intended use, this product does not pose a health risk.

### Exposure Inhalation

Further processing such as: welding, burning, sawing, brazing, grinding or machining may generate dusts or fumes of oxides. Inhalation of dust or fumes released during processing of this product may cause mild irritation of the respiratory

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tract. High concentrations, repeated and prolonged overexposure to oil mists may result in droplet deposition, oil granuloma formation, inflammation and increased incidence of infection in the respiratory tract.

### Eye Effects

Contact with hot product may cause thermal burns, which could result in permanent damage. When product is further processed, dust could be generated which may irritate eyes.

### Skin Effects

Contact with hot product may cause thermal burns, which could result in permanent damage. Dust and oils may cause irritation to the skin

Product may contain Nickel, which may cause allergy or asthma symptoms or affect breathing if inhaled, although release for the bound material is not expected.

Product may contain Copper, which may cause irritation to the eyes, nose and throat and could cause coughing, wheezing, nosebleeds and metal fume fever. Repeated inhalation exposure of copper fumes effects can be metallic or sweet taste and discoloration of the skin, teeth or hair. Overexposure to Copper can affect a person's liver.

### Ingestion

No ingestion hazard under normal conditions. Welding, burning, sawing, brazing, grinding or machining may generate dusts may cause nausea and vomiting.

### Symptoms related to Physical, Chemical and Toxicological Characteristics

Exposure to dust or fume may cause tearing of the eyes, redness and/or discomfort. May cause dryness to the skin causing discomfort, dermatitis, irritation and cracking.

High concentrations of fumes / dusts of oxides could cause symptoms of metal fume fever. Typical metal fume fever symptoms last 12 to 48 hours and are characterized by a metallic taste and dryness of mouth and irritation to throat and weakness and pain in the muscles with fever and chills.

### Information on Toxicological Effects

#### **Acute Toxicity**

Further processing of this product may generate hazardous dusts or fumes. Welding, cutting and metalizing can generate ozone and cause irritation of eyes, nose and respiratory tract.

No LC50 or LD50 established for the mixture as a whole. Chemicals with established limits:

Chemical	LD50 or LD <sub>Lo</sub> or TD <sub>Lo</sub>
Boron	LD50 = 2000 mg/kg oral (mouse)
Chromium	LD <sub>Lo</sub> = 71 mg/kg oral (human)
Copper	TD <sub>Lo</sub> = 120 ug/kg oral (human)
Manganese	LD50 = 9 g/kg oral (rat)
Molybdenum	LD <sub>Lo</sub> = 70 mg/kg intratracheal (rabbit)
Nickel	LD <sub>Lo</sub> = 5 mg/kg oral (guinea pig)

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Silicon	LD50 = 3160 mg/kg oral (rat)
Sulfur	LD50 = >8437 mg/kg oral (rat)
Vanadium	LD50 = 59 mg/kg scu (rabbit)

### **Germ Cell Mutagenicity**

No hazard in standard form; this ingredient is bounded within the product. Further processing could liberate hazardous vanadium pentoxide (classified as suspect of causing genetic defects) at temperatures above melting point.

### **Carcinogenicity**

No hazard in standard form; this ingredient is bounded within the product. Further processing could liberate hazardous oxides such as iron oxides and vanadium pentoxide at temperatures above melting point. Inhaling concentrations of a high value of iron oxide may possibly increase the risk of lung cancer.

## 12. ECOLOGICAL INFORMATION

### **Eco toxicity**

Environmental hazard is considered limited.

### **Persistence and Degradability**

No data available

### **Bio accumulative Potential**

No data available

### **Mobility in Soil**

Not relevant

### **Other Adverse Effects**

None known

## 13. DISPOSAL CONSIDERATIONS

### **Disposal Instructions**

Dispose according to federal, state and local regulations as appropriate; always try to recycle if possible.

### **Hazardous Waste Codes**

Not regulated

## 14. TRANSPORT INFORMATION

Material is not DOT regulated.

## 15. REGULATORY INFORMATION

Material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. By-products from further processing such as dust and fumes may be combustible or hazardous and require compliance with applicable federal, state and local laws and regulations.

### **California Proposition 65**

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This product may contains chemicals (Antimony, arsenic, beryllium, chromium, cobalt, cadmium, lead and nickel) known to the state of California to cause cancer and chemicals (cadmium and lead) known to the state of California to cause birth defects or other reproductive harm.

### Massachusetts Substance List

This product may contain aluminum, antimony, arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, magnesium, manganese, molybdenum, nickel, nitrogen, phosphorus, selenium, silicon, sulfur, tin, titanium, tungsten vanadium and zinc.

### Pennsylvania Hazardous Substance List

This product may contain aluminum, antimony, arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, magnesium, manganese, molybdenum, nickel, nitrogen, phosphorus, selenium, silicon, sulfur, tin, titanium, tungsten vanadium and zinc.

### New Jersey Hazardous Substance List

This product may contain aluminum, antimony, arsenic, beryllium, boron, cadmium, chromium, cobalt, copper, lead, magnesium, manganese, molybdenum, nickel, nitrogen, phosphorus, selenium, silicon, sulfur, tin, titanium, tungsten vanadium and zinc.

### Toxic Substances Control Act (TSCA)

Components of this material are listed on the TSCA Inventory.

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

Material is not reportable in steel coil form but substances contained within are hazardous and may be reportable if diameters are less than or equal to 0.004 inches.

## 16. OTHER INFO

See document header and footers for document numbering, revisions and issue dates

### HMIS Ratings

Health: 0

Flammability: 0

Physical Hazard: 0

### Disclaimer

This information is provided without warranty and is believed to be correct. This information should be used to safeguard the environment and workers. SDS for the specific coatings are available upon request.