



1. PRODUCT AND COMPANY IDENTIFICATION

Company Name: Byer Steel Rebar
Company Address: 200 W. North Bend Road, Cincinnati, OH 45216
Emergency Phone Number: (513) 679-4499 or nearest Poison Control Center
Trade Name (Common and Synonyms): Carbon Steel
Chemical Name: ASTM Grade A996
Form: Concrete Reinforcing Bar, Round, R. R. Axle, Scrap

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Steel product in their solid state present no inhalation, ingestion or contact health hazard. Operations such as burning, welding, sawing, brazing, grinding and machining, which result in elevating the temperature of the product to, or above its melting point, or result in the generation of airborne particulate may present hazards. The major exposure hazard is inhalation. Effects of overexposure to fume and dust are as follows:

Acute: Excessive inhalation of metallic fumes and dusts may result in irritation of eyes, nose and throat. High concentrations of fumes and dusts of iron-oxide, manganese or copper may result in metal fume fever. Typical symptoms last from 12 to 48 hours and consist of a metallic taste in the mouth.

Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element:

- Chromium:** Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs- bronchogenic carcinoma.
- Copper:** No chronic debilitating symptoms indicated.
- Iron:** Siderosis, pulmonary effects. No chronic debilitating symptoms indicated.
- Manganese:** Bronchitis, pneumonitis, lack of coordination.
- Molybdenum:** Respiratory tract irritation, possible liver and kidney damage, bone deformity.
- Nickel:** Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs-bronchogenic carcinoma.
- Phosphorous:** Necrosis of the mandible.
- Sulfur (as sulfur dioxide):** Edema of the lungs.
- Vanadium (as vanadium pentoxide):** Emphysema, pneumonia.

Occupational Exposure Limits: See Section 2 – Composition/Information on Ingredients. Chromium and Nickel have been identified by the International Agency for Research on Cancer (IARC) and/or the National Toxicology Program (NTP) as potential cancer causing agents.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition			Exposure Limits	
Material	CAS No.	% Wt.	OSHA PEL (mg/m ³)	ACGIH TLV (mg/m ³)
Base Metal				
Iron (Fe)	7429-90-6	>98.0	10 - Oxide Fume	5 - Oxide Fume
Alloying Elements				
Carbon (C)	7440-44-0	<0.54	Not Established	Not Established
Chromium (Cr)	7440-47-3	<0.06	1.0 Chrome Metal	0.5 Chrome Metal
Copper (Cu)	7440-50-8	<0.10	0.1 Fume / 1.0 Dust	0.1 Fume / 1.0 Dust
Manganese (Mn)	7439-96-5	<0.86	5c Fume / 5c Dust	1 Fume / 5c Dust
Molybdenum (Mo)	7439-98-7	<0.01	15 Insol Compounds	10 Insol Compounds
Nickel (Ni)	7440-02-0	<0.09	1 Nickel Metal	1 Nickel Metal
Phosphorous (P)	7723-14-0	<0.10	0.1 Phosphorous	0.1 Phosphorous



Silicon (Si)	7440-21-3	<0.27	Not Established	Not Established
Sulfur (S)	7704-34-9	<0.04	5 Sulfur Dioxide	5 Sulfur Dioxide
Vanadium (V)	7440-62-2	<0.02	0.05c Fume / 0.05c Dust	0.05 Fume / 0.05 Dust

Note: The above listing is a summary of elements used in alloying steel. Various grades of steel will contain different combinations of these elements. Trace elements may also be present in minute amounts. No permissible exposure limits (PEL) or threshold limit values (TLV) exist for steel. Values shown are applicable to component elements

4. FIRST-AID MEASURES

EMERGENCY MEDICAL PROCEDURES:

Inhalation: Remove to fresh air; if condition continues, consult a physician.

Eye Contact: Flush thoroughly with running water to remove particulate; seek medical attention.

Skin Contact: Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.

Ingestion: If significant amounts of metal are ingested, consult a physician.

5. FIRE-FIGHTING MEASURES

Flash Point: N/A

Auto-Ignition Temperature: N/A

Flammable Limits in Air: N/A

Fire & Explosion Hazards-Extinguishing Media: Steel does not present fire or explosion hazards under normal conditions. Use fire-fighting methods and materials that are appropriate for surrounding fire. Fine metal particles, such as produce in grinding and sawing, can burn. High concentration of metallic fines in the air may present an explosion hazard. Molten metal may explode on contact with water. For these fires use dry powder or sand extinguishing media.

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY MEDICAL PROCEDURES:

Inhalation: Remove to fresh air; if condition continues, consult a physician.

Eye Contact: Flush thoroughly with running water to remove particulate; seek medical attention.

Skin Contact: Remove particles by washing thoroughly with soap and water. Seek medical attention if condition persists.

Ingestion: If significant amounts of metal are ingested, consult a physician.

OCCUPATIONAL PROTECTIVE MEASURES:

Respiratory Protection: Appropriate dust/mist/fume respirator should be used to avoid excessive inhalation of particulate. If exposure limits are reached or exceeded, use NIOSH approved equipment.

Hands, Arms and Body: Protective gloves should be worn as required for welding, burning or handling operations.

Eyes and Face: Safety glasses should be worn when grinding or cutting. Face shields should be worn when welding or burning.

Other Clothing and Equipment: As required depending upon operations and safety codes.

SPILL, LEAK & DISPOSAL METHODS:

Fine turnings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for reuse. Used or unused product should be disposed of in accordance with federal, state or local laws and regulations.

7. HANDLING AND STORAGE

Stability: Stable under normal conditions of use, storage or transportation.

Incompatibility (materials to avoid): Reacts with strong acids to form hydrogen gas.

Conditions to Avoid: Steel at temperatures above melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume and dust.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL PROTECTIVE MEASURES:

Respiratory Protection: Appropriate dust/mist/fume respirator should be used to avoid excessive inhalation of particulate. If exposure limits are reached or exceeded, use NIOSH approved equipment.

Hands, Arms and Body: Protective gloves should be worn as required for welding, burning or handling operations.

Eyes & Face: Safety glasses should be worn when grinding or cutting. Face shields should be worn when welding or burning.

Other Clothing and Equipment: As required depending upon operations and safety codes.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Solid under normal conditions.

Appearance & Odor: Gray-black or Silver-gray odorless metal.

Specific Gravity (H₂O = 1): 7.84

Melting Point: Approx. 2800 F

Vapor Pressure: N/A

Acidity/Alkalinity: N/A

Solubility in Water: (% by weight): N/A

Boiling Point: N/A

Vapor Pressure: N/A

% Volatile by Volume: N/A

10. STABILITY AND REACTIVITY

REACTIVITY INFORMATION:

Stability: Stable under normal conditions of use, storage or transportation.

Incompatibility (materials to avoid): Reacts with strong acids to form hydrogen gas.

Conditions to Avoid: Steel at temperatures above melting point may liberate fumes containing oxides of iron and alloying elements. Avoid generation of airborne fume and dust.

11. TOXICOLOGICAL INFORMATION

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Manganese: Bronchitis, pneumonitis, lack of coordination.

Molybdenum: Respiratory tract irritation, possible liver and kidney damage, bone deformity.

Nickel: Lesions of the skin and mucous membranes, possibly cancer of the nose or lungs-bronchogenic carcinoma.

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Occupational Exposure Limits: See Section 2 – Composition/Information on Ingredients. Chromium and Nickel have been identified by the International Agency for Research on Cancer (IARC) and/or the National Toxicology Program (NTP) as potential cancer causing agents.



12. ECOLOGICAL INFORMATION

GENERAL ECOLOGICAL INFORMATION:

See sections 1 through 11 and section 13

13. DISPOSAL CONSIDERATIONS

SPILL, LEAK & DISPOSAL METHODS:

Fine turnings and small chips should be swept or vacuumed. Scrap metal can be reclaimed for reuse. Used or unused product should be disposed of in accordance with federal, state or local laws and regulations.

14. TRANSPORT INFORMATION

GENERAL TRANSPORT INFORMATION:

See sections 1 through 11 and section 13

15. REGULATORY INFORMATION

GENERAL REGULATORY INFORMATION:

See sections 1 through 11 and section 13

16. OTHER INFORMATION

ADDITIONAL PRECAUTIONS:

Minimize and control operations producing dust and fume. Provide adequate exhaust ventilation and maintain good housekeeping.

Date of last revision: August 19th, 2015

DISCLAIMER

This SDS is intended for use solely of safety education and environmental health training not for specification purposes. The information in this SDS was obtained from usually reliable sources and is provided without any representation or warranty, express or implied regarding the accuracy or correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. Byer Steel Rebar assumes no responsibility and expressly disclaims liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the produce.