

Safety Data Sheet (SDS)



Steel Rebar

1. Identification

TRADE NAME(S): Steel Rebar

SYNONYMS and/or GRADES: Reinforcing bar

PRODUCT USES: Construction material

CHEMICAL NAME/CLASS: Structural steel product

MANUFACTURER'S NAME: Weyerhaeuser

ADDRESS: 220 Occidental Ave S., Seattle, WA 98104

EMERGENCY PHONE: (844) 523-4081 (3E Company)

BUSINESS PHONE: (206) 539-3910


INTERNET ACCESS: See section 16

DATE: August 27, 2018


2. Hazard(s) Identification

Signal Word(s): **DANGER**

This product may present a health hazard from direct contact. Additionally, downstream processes such as welding, sawing, brazing, grinding, or abrasive blasting may result in the formation of fumes and/or dust that have the potential hazards described below:

Product Classification	Hazard Statement(s)	Pictogram
HEALTH Carcinogen- Category 1B (H350) * Specific Target Organ Toxicity- Repeated Exposure (STOT) Category 1 (H372)	May cause cancer Inhalation may cause damage to respiratory tract through prolonged or repeated exposure	

2. Hazard(s) Identification (cont'd.)

Skin Sensitizer Category 1 (H317)	May cause an allergic skin reaction	
Combustible Dust (OSHA Defined Hazard)	If small particles accumulate during further processing, handling, or by other means, may form combustible dust concentrations in air.	None

*Hazard codes (GHS)

HMIS Rating (Scale 0-4): **Health = 2*** **Fire = 0** **Physical Hazard = 0**
NFPA Rating (Scale 0-4): **Health = 2** **Fire = 0** **Reactivity = 0**

Precautionary Statement(s):

Prevention Statements:

- P202: Do not handle until all safety precautions have been read and understood.
- P261+284: Avoid breathing dust/fumes. In case of inadequate ventilation wear an approved respirator suitable for conditions of use.
- P272: Contaminated work clothing should not be allowed out of the workplace.
- P280: Wear appropriate protective equipment for eye and skin exposure.

Response Statements:

- P304+P340+P313: If inhaled and breathing becomes difficult, remove person to fresh air and keep comfortable for breathing. If symptoms persist, call a doctor or other qualified medical professional.
- P333+P313: If skin irritation or rash occurs get medical advice/attention.
- P352+P264: If on skin wash with plenty of soap and water.
- P305+P351+P338: If in eyes, rinse cautiously for several minutes. Remove contact lenses if present and easy to do so.

Disposal:

- P501: Dispose of in accordance with federal, state and local regulations

Ingredients of Unknown Acute Toxicity (>1%): NAP

3. Composition/Information on Ingredients

Ingredient(s)	CAS#	Wt. %
Iron (Fe)	1309-37-1	>80
Arsenic (As)	7440-38-2	<1 – 6
Chromium (Cr)	74440-47-3	0.01-1.2
Manganese (Mn)	7439-96-5	0.2-2
Lead (Pb)	7439-92-1	<0.09
Nickel (Ni)	7440-02-0	0.4-0.5
Beryllium (Be)	7440-41-7	<0.07

4. First Aid Measures

Inhalation: If dust or fumes are inhaled and breathing difficulties occur, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Eye Contact: Treat dust in eye as a foreign object. Flush with water to remove dust particles. Remove contact lenses if present and easy to do so. Avoid touching or rubbing eyes to avoid further irritation or injury. Seek medical help if irritation persists.

Skin Contact: Wash off with soap and plenty of water. Consult a physician.

Skin Absorption: Product is not known to be absorbed through the skin.

Ingestion: Never give anything by mouth to person who becomes unconscious, consult a physician if excessive amounts of particulate are swallowed.

Medical Conditions Aggravated by Exposure: Diseases of the skin such as eczema may be aggravated by dermal exposure as well as disorders of the respiratory system including asthma, bronchitis, and emphysema from dust/fume inhalation. Long-term inhalation exposure to agents that cause pneumoconiosis (e.g. dust related diseases) may act synergistically with inhalation of oxide fumes or dusts of this product.

Notes to Physician: Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytosis. Treatment is symptomatic, and condition is self-limited to 24-48 hours.

Symptoms or Effects:

Acute Symptoms/Effects – Some components in this product can cause a dermal allergic reaction, possibly resulting in burning, itching and skin eruptions. Contact with heated material may cause thermal burns. Dusts may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dusts may result in metal fume fever, an influenza-like illness. It is characterized by a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue, muscle and joint pains, blurred vision, fever and chills. Typical symptoms last from 12 to 48 hours.

Delayed Symptoms/Effects – Metal fume fever symptoms may be delayed for 4-10 hours following exposures. Allergic skin reactions may be delayed and may not be expressed on initial exposures but may be with subsequent exposures. See Section 11 for additional information on chronic effects.

5. Fire-fighting Measures

Extinguishing Media and Restrictions: Use appropriate extinguishing media for surrounding area. Use water spray, alcohol-resistant foam or dry chemical. For molten metal, use dry powder or sand.

Specific Hazards, Anticipated Combustion Products: Multiple elemental alloys and their oxides as well as sulfur oxides.

Auto ignition Temperature: NAP

Special Firefighting Equipment/Procedures: Do not use water on molten metal. Do not use Carbon Dioxide (CO₂). Firefighters should not enter confined spaces without wearing NIOSH/MSHA approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

Unusual Fire and Explosion Hazards: Under normal conditions steel products do not present fire or explosion hazards, and dust generated by handling steel products is oxidized and not combustible. Processing of steel product may however produce potentially combustible dust depending on moisture content, and more importantly, particle diameter and airborne concentration in a contained area which may potentially explode in the presence of an ignition source. Use good housekeeping to prevent accumulations of material. Avoid conditions that generate significant quantities of airborne dust. Reference NFPA 652 "Standard on the Fundamentals of Combustible Dust" for guidance.

6. Accidental Release Measures

Steps to be taken in case Material Is Released or Spilled: Metal dust turnings and small chips should be swept or vacuumed and placed into appropriate disposable containers. Keep fine dust or powder away from sources of ignition. Scrap should be reclaimed for recycling. Prevent materials from entering drains, sewers, or waterways. Avoid generating dusty conditions and provide good ventilation.

7. Handling and Storage

Precautions to be taken in Handling and Storage: Avoid direct contact with skin and eyes if in dust form. Use proper personal protective equipment (see section 8 below) when handling. Provide appropriate exhaust ventilation at places where dust is formed, and exposure limits may be exceeded.

8. Exposure Control Measures/Personal Protection

Exposure Limits/Guidelines:

Ingredient(s)	Agency	Exposure Limit(s)	Comments
Iron oxide	OSHA ACGIH	PEL-TWA 10 mg/m ³ TLV-TWA 5 mg/m ³	Fume Respirable fraction
Arsenic	OSHA ACGIH	PEL-TWA 0.01 mg/m ³ TLV-TWA 0.01 mg/m ³	Total dust Total dust
Chromium (metal)	OSHA ACGIH	PEL-TWA 1.0 mg/m ³ TLV-TWA 0.5 mg/m ³	Total dust Inhalable fraction
Lead	OSHA ACGIH	PEL-TWA 0.05 mg/m ³ TLV-TWA 0.05 mg/m ³	Total dust Total dust
Nickel (metal as Ni)	OSHA ACGIH	PEL-TWA 1 mg/m ³ TLV-TWA 1.5 mg/m ³	Total dust Inhalable fraction
Beryllium	OSHA OSHA ACGIH	PEL-TWA 0.0002 mg/m ³ PEL-STEL 0.002 mg/m ³ TLV-TWA 0.00005 mg/m ³	Total dust Inhalable fraction
Manganese	OSHA ACGIH	PEL-Ceiling(C) 5 mg/m ³ TLV-TWA 0.02 mg/m ³ TLV-TWA 0.1 mg/m ³	Total dust Respirable fraction Inhalable fraction

NOTE: No Permissible Exposure Limits (PEL) or Threshold Limit Values (TLV) exist for steel as a compound.

8. Exposure Control Measures/Personal Protection (cont'd.)

Ventilation:

LOCAL EXHAUST – Provide local exhaust as needed so that exposure limits are met. Use with adequate ventilation to ensure exposure levels are maintained below the limits provided. Use local exhaust ventilation, and process enclosure if necessary, to control airborne dust. Ventilation to control dust should be considered where potential explosive concentrations and ignition sources are present. The design and operation of any exhaust system should consider the possibility of explosive concentrations of metal dust within the system. See “SPECIAL” section below.

MECHANICAL (GENERAL) – Maintain levels below exposure limit concentrations.

SPECIAL – Ensure that exhaust ventilation and material transport systems involved in handling this product contain explosion relief vents or suppression systems designed and operated in accordance with applicable standards if the operating conditions justify their use.

OTHER ENGINEERING CONTROLS – NAP

Personal Protective Equipment:

RESPIRATORY PROTECTION – Use filtering face piece respirator (dust/fume/mist) tested and approved under appropriate government standards such as NIOSH (US), CSA (Canada), CEN (EU), or JIS (Japan) if exposure limits may be exceeded or for additional worker comfort or symptom relief. Use filtering face piece respirator and goggles or a faceshield if welding on product. Select and use respiratory protection in accordance with regulatory requirements such as the OSHA respiratory protection standard 29CFR 1910.134 following a determination of risk from potential exposures.

PROTECTIVE GLOVES – Cloth, canvas, or leather gloves are recommended when handling product to prevent direct contact and to minimize potential mechanical irritation.

EYE PROTECTION – Wear safety glasses with side shields and/or face shield if exposure hazard is present.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT – Protective clothing with long sleeves or disposable outer garments may be desirable in extremely dusty areas.

WORK/HYGIENE PRACTICES – Minimize blowdown or other practices that generate high airborne dust concentrations. Avoid dust contamination of eating and break areas.

9. Physical/Chemical Properties

Appearance: Material is a solid silver/gray to grey/black rod with a metallic luster with spray painted ends of various colors corresponding to type/length.

Odor/Odor Threshold(s):	NAV
pH:	NAP
Melting/Freezing Point:	Approximately 2800 °F
Boiling Point (@ 760 mm Hg) and Range:	NAP
Flash Point:	NAP
Evaporation Rate:	NAP
Flammability:	NAP
Lower/Upper Explosive Limits:	NAP
Vapor Pressure (mm Hg):	NAP
Vapor Density (air = 1; 1 atm):	NAP
Relative Density:	NAP
Solubility:	NAP
Partition Coefficient (n-octanol/water):	NAP
Autoignition Temperature:	NAV
Decomposition Temperature:	NAV
Viscosity:	NAP
Other Properties:	NAP

10. Stability and Reactivity

Reactivity: NAP

Hazardous Polymerization: May occur Will not occur

Stability: Unstable Stable

Conditions to Avoid: NAP

Incompatibility (Materials to Avoid): Reacts with strong acids to form hydrogen gas. Do not store near strong oxidizers.

Hazardous Decomposition or By-Products: This material will not spontaneously decompose. Oxidation of steel products will consume oxygen and may lead to oxygen deficiency in enclosed and poorly ventilated spaces.

Sensitivity to Static Discharge: Airborne fine metallic dusts can be ignited by static discharge.

11. Toxicological Information

Likely Route(s) of Exposure:

- Ingestion:
- Skin:
- Inhalation:
- Eye:

Signs and Symptoms of Exposure:

Acute Health Hazards: See section 4 above.

Chronic Health Hazards: Chronic exposure to dusts may result in pneumoconiosis of mixed type. Repeated exposure to fine dusts may inflame the nasal mucosa and cause lung changes. A red-brown pigmentation of the eye and/or skin may occur. Welding fumes have been associated with adverse health effects. Contains components that may cause cancer or reproductive effects.

The primary component of this product is iron. Long-term inhalation exposure to iron dusts or fumes can result in a condition called siderosis which is considered to be a benign pneumoconiosis. Symptoms may include chronic bronchitis, emphysema, and shortness of breath upon exertion.

When this product is welded, cut or ground, fumes are generated. Welding fumes may be different in composition from the original welding product, with the chief component being ordinary oxides of the metal being welded. Chronic health effects have been associated with the fumes and dusts of individual component metals, and welding fumes as a general category have been listed by IARC as a carcinogen (Group 2B). Some welding fumes contain known reproductive toxins, e.g., lead, which may be present in the coating material of this product.

Breathing fumes or dusts of this product may result in metal fume fever, which is an illness produced by inhaling metal oxides. The most common agents involved are zinc and copper.

This product may contain small amounts of manganese. Prolonged exposure to manganese dusts or fumes is associated with manganism, a Parkinson-like syndrome characterized by a variety of neurological symptoms.

This product may contain small amounts of cadmium. Primary target organs for cadmium overexposure are the lung and the kidney.

This product may contain small amounts of chromium. Prolonged and repeated overexposure to chromium dusts or fumes may cause skin ulcers, nasal irritation and ulceration, kidney damage and cancer of the respiratory system. Chromium is a skin sensitizer. Cancer is generally attributed to the hexavalent (+6, CrVI) form of chromium which is formed under high temperature welding conditions.

11. Toxicological Information (cont'd.)

This product may contain small amounts of nickel. Prolonged and repeated contact with nickel may cause sensitization dermatitis. Inhalation of nickel compounds has caused lung damage as well as sinus, nasal and lung cancer in laboratory animals.

This product may contain small amounts of vanadium. Adverse effects from dermal, inhalation or parenteral exposure to various vanadium compounds have been reported. The major target for vanadium pentoxide toxicity is the respiratory tract. Fumes or dust can cause severe eye and respiratory irritation, and systemic effects.

This product may contain small amounts of lead. Lead can accumulate in the body. Consequently, exposure to fumes or dust may produce signs of polyneuritis, diminished vision and peripheral neuropathy, such as tingling and loss of feeling in fingers, arms and legs. Lead is a known reproductive and developmental toxin. It is also associated with central nervous system disorders, anemia, kidney dysfunction and neurobehavioral abnormalities. The brain is a major target organ for lead exposure.

The product may contain small amounts of copper. Copper dust and fumes can irritate the eyes, nose and throat causing coughing, wheezing, nosebleeds, ulcers and metal fume fever. Other effects from repeated inhalation of copper fumes include a metallic or sweet taste, and discoloration of skin, teeth or hair. Copper also may cause an allergic skin reaction.

Carcinogenicity Listing(s) (checked if applicable):

- NTP: May contain arsenic (inorganic), beryllium, cadmium, and nickel (powder, particle diameter <1 mm): Known to be a Human Carcinogen. May contain lead and nickel: Reasonably Anticipated to be a Human Carcinogen.
- IARC Monographs: May contain arsenic (inorganic) cadmium and beryllium Group 1- carcinogenic to humans. May contain cobalt, nickel (powder, particle diameter <1 mm), lead and antimony (trioxide) Group 2B- possibly carcinogenic to humans.
- OSHA Regulated: Arsenic compounds (29 CFR 1910.1018): lead (29 CFR 1910.1025), hexavalent chromium (29 CFR 1910.1026), beryllium (29 CFR 1910.1024) and cadmium (29 CFR 1910.1027).

Toxicity Data: None available for product in final form.

Components: NAP

Target Organs: Eyes, skin, liver, gastrointestinal, nervous and hematopoietic systems.

12. Ecological Information

Ecotoxicity: No specific information available on this product.

Biopersistence and Degradability: Not expected to biodegrade.

Bioaccumulation: Not expected to bioaccumulate.

Soil Mobility: NAP

Other Adverse Effects: NAP

13. Disposal Considerations

Waste Disposal Method: Recovery and reuse, rather than disposal, should be the goal of handling efforts. It is, however, the user's responsibility to determine at the time of disposal whether the product meets EPA RCRA criteria for hazardous waste. Follow applicable federal, state, and local regulations.

14. Transport Information

Mode: (air, Land, water) Not regulated as a hazardous material by the U. S. Department of Transportation.

Proper Shipping Name: NAP
Hazard Class: NAP
UN/NA ID Number: NAP
Packing Group: NAP
Label/Placard Required: NAP

15. Regulatory Information

TSCA: All components are listed on the TSCA inventory.

CERCLA: Steel is not reportable; however, it contains hazardous substances that may be reportable if released in pieces with diameters less than or equal to 0.004 inches. Antimony and chromium (RQ 5000 lbs.). Zinc (RQ 1,000 lbs.). Selenium and nickel (RQ 100 lbs.). Beryllium, cadmium and lead (RQ 10 lbs.). Arsenic and phosphorous (RQ 1 lb.).

DSL: All components are listed on the Canadian DSL.

OSHA: Hazards including dermal contact exposures, dusts/fumes and combustible dusts from this product are regulated by the OSHA Hazard Communication Standard (29 CFR 1910.1200) as a hazardous chemical.

STATE RIGHT-TO-KNOW:

California Proposition 65 –



WARNING: This product can expose you to chemicals including nickel (metallic), which are known to the State of California to cause cancer, and lead, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov. This product also contains chemicals including antimony oxide, arsenic, beryllium, cobalt, cadmium, lead and titanium dioxide (airborne unbound particles of respirable size – potentially released from paint) known to the State of California to cause cancer and cadmium, which is known to the State of California to cause birth defects or other reproductive harm.

Massachusetts – 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 are listed on the Massachusetts Right to Know List.

Pennsylvania – 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 are listed on Pennsylvania's Appendix A – Hazardous Substance List.

SARA 313 Information: This product contains chemical subject to SARA Title III Section 313 supplier notification requirements. Nickel, and chromium in concentrations > 0.1% and manganese in concentrations >1 %.

SARA 311/312 Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under SARA Title III Sections 311 and 312 and is considered, under applicable definitions, to meet the following categories:

An immediate (acute) health hazard	Yes
A delayed (chronic) health hazard	Yes
A corrosive hazard	No
A fire hazard	No
A reactivity hazard	No
A sudden release hazard	No

FDA: Not intended to be ingested or used in a direct/indirect food contact item.

WHMIS Classification: See Section 2.

16. Other Information

Date Prepared: 08/27/2018

Date Revised: NAP

Prepared By: Weyerhaeuser Company Health and Safety.

Weyerhaeuser SDS available on:

<http://www.wy.com/sustainability/environment/product-stewardship/safety-data-sheets/>

User's Responsibility: The information contained in this Safety Data Sheet is based on the experience of occupational health and safety professionals and comes from sources believed to be accurate or otherwise technically correct. It is the user's responsibility to determine if the product is suitable for its proposed application(s) and to follow necessary safety precautions. The user has the responsibility to ensure that the most current SDS is used.

Definition of Common Terms:

ACGIH®	= American Conference of Governmental Industrial Hygienists
C	= Ceiling Limit
CAS#	= Chemical Abstracts System Number
DOT	= U. S. Department of Transportation
DSL	= Domestic Substance List
EC#	= Identifying Number Assigned to Chemicals Contained in the European Inventory of Existing Chemical Substances (EINECS)
EC ₅₀	= Effective Concentration That Inhibits the Endpoint to 50% of Control Population
EPA	= U.S. Environmental Protection Agency
GHS	= Globally Harmonized System of Classification and Labelling of Chemicals
HMIS	= Canada-Hazardous Materials Identification System
HNOC	= Hazards Not Otherwise Classified
IARC	= International Agency for Research on Cancer
IATA	= International Air Transport Association
IMDG	= International Maritime Dangerous Goods
LC ₅₀	= Concentration in Air Resulting in Death To 50% of Experimental Animals
LCLo	= Lowest Concentration in Air Resulting in Death
LD ₅₀	= Administered Dose Resulting in Death to 50% of Experimental Animals
Ludlow	= Lowest Dose Resulting in Death
LEL	= Lower Explosive Limit
LFL	= Lower Flammable Limit
MSHA	= Mine Safety and Health Administration
NAP	= Not Applicable
NAV	= Not Available
NIOSH	= National Institute for Occupational Safety and Health
NFPA	= National Fire Protection Association
NPRI	= Canada-National Pollution Release Inventory
NTP	= National Toxicology Program
OSHA	= Occupational Safety and Health Administration
PEL	= Permissible Exposure Limit
PNOR	= Particulate Not Otherwise Regulated
PNOS	= Particulate Not Otherwise Specified
RCRA	= Resource Conservation and Recovery Act
STEL	= Short-Term Exposure Limit (15 minutes)
STP	= Standard Temperature and Pressure
TCLo	= Lowest Concentration in Air Resulting in a Toxic Effect
TDG	= Canada-Transportation of Dangerous Goods
TDLo	= Lowest Dose Resulting In a Toxic Effect
TLV	= Threshold Limit Value

16. Other Information (cont'd.)

TSCA = Toxic Substance Control Act
TWA = Time-Weighted Average (8 hours)
UFL = Upper Flammable Limit
WHMIS = Canada-Workplace Hazardous Materials Information System

Steel Rebar



Danger

May cause cancer. Inhalation may cause damage to respiratory tract through prolonged or repeated exposures. May cause an allergic skin reaction.

May Form Combustible Dust Concentrations in Air if Small Particles Are Formed During Processing or Handling

Precautions: Do not handle until all safety precautions have been read and understood. Avoid breathing dust and wear appropriate protective equipment for respiratory, skin or eye exposures. Prevent dust release and accumulations to minimize hazards. Contaminated work clothing should not be allowed out of the workplace. Take off contaminated clothing and wash before reuse. Keep dust away from ignition sources such as heat, sparks, and flame.

First Aid:

If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

If on skin, wash with plenty of soap and water. If skin irritation or rash occurs, get medical advice/attention.

Inhalation, if experiencing respiratory symptoms, remove to fresh air. Contact a qualified medical professional for serious or persistent skin, eye or respiratory symptoms.

Weyerhaeuser
220 Occidental Ave S.
Seattle, WA 98104
1-800-525-5440



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