Strand Anchor

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Date of Issue: 01/24/2025 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Name: Strand Anchor

1.2. Intended Use of the Product

Retaining Wall and erosion control systems

1.3. Name, Address, and Telephone of the Responsible Party

Company

Nucor LMP Steel, Inc.
2000 East First Street
Maryville, MO 64468
USA
1-660-582-3127

1.4. Emergency Telephone Number

Emergency Number : For Chemical Emergency Call CHEMTREC day or night
Within USA and Canada: 1.800.424.9300
Outside USA and Canada: 1.703.527.3887 (collect calls accepted)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Not classified.

2.2. Label Elements

GHS-US/CA Labeling

No labeling applicable according to 29 CFR 1910.1200 and the Hazardous Products Regulations (HPR) SOR/2015-17.

2.3. Other Hazards

This product is physiologically inert in its massive form. However, user-generated dust and/or fumes may pose a physiological hazard if inhaled or ingested. Avoid inhalation of metal dusts and fumes. May cause an influenza-like illness. Avoid skin and eye contact with dusts to prevent mechanical irritation. User-generated dust is easily ignited and difficult to extinguish

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Manganese	Manganese, elemental Manganese metal manganese	(CAS-No.) 7439-96-5	0.2 - 2	Not classified
Chromium	Chromium metal Chromium, elemental Chromium, metal Chromium, metallic Chrome, metal Chrome CHROMIUM	(CAS-No.) 7440-47-3	0.01 - 1.2	Not classified
Acetone	ACETONE Propan-2-one 2-Propanone Dimethyl ketone Propanone	(CAS-No.) 67-64-1	< 0.1	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
Tetrahydrofuran	Butane, 1,4-epoxy- Cyclotetramethylene oxide	(CAS-No.) 109-99-9	< 0.1	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302

	Diethylene oxide 1,4-Epoxybutane Furan, tetrahydro- Oxacyclopentane THF Butylene oxide			Acute Tox. 4 (Inhalation:vapor), H332 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H336 STOT SE 3, H335
Cyclohexanone	Anon CYCLOHEXANONE Sextone Cyclohexyl ketone	(CAS-No.) 108-94-1	< 0.1	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:gas), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 2, H401 Aquatic Chronic 2, H411
Methyl ethyl ketone	Butan-2-one 2-Butanone Ethyl methyl ketone Methyl acetone MEK Butanone	(CAS-No.) 78-93-3	< 0.1	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
Silica, amorphous	Amorphous silica Silica Silica, amorphous, fumed Silica, colloidal Silicon dioxide Silicon dioxide, amorphous SILICA Silicon(IV) oxide Un-crystalline silica Pigment White 27 Silicon dioxide (amorphous) Silicon dioxide amorphous Fumed silica SOLUM DIATOMEAE silicon dioxide Hydrated silica	(CAS-No.) 7631-86-9	< 0.1	Not classified.

Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: Using proper respiratory protection, immediately move the exposed person to fresh air. Encourage exposed person to cough, spit out, and blow nose to remove dust. Obtain medical attention if breathing difficulty persists.

Skin Contact: Cool skin rapidly with cold water after contact with molten product. Removal of solidified molten material from skin requires medical assistance. Remove contaminated clothing. Drench affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Removal of solidified molten material from the eyes requires medical assistance. Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.

Skin Contact: Contact with fumes or metal powder will irritate skin. Contact with hot, molten metal will cause thermal burns.

Eye Contact: During metal processing, dusts caused from physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes. Risk of thermal burns on contact with molten product.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: Overexposure to metal fumes may result metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude), disturbances in smell and/or taste, and possible discloration of skin, hair and mucous membranes; discoloration may become permanent.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: For metal fires, dry sand, graphite, or dry table salt may be used. Use class D extinguishing media on fines, dust, or molten metal. Use water spray on chips and fines.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire. Do not use halogenated extinguishing agents on small chips or fines. Do not use water when molten material is involved, contact of hot product with water will result in a violent expansion as the water turns to steam causing explosion with massive force.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures. Small chips, turnings, dust and fines from processing may be readily ignitable. Molten material may react violently with water forming explosive or flammable reactions.

Explosion Hazard: Product is not explosive. Molten material may react violently with water forming explosive or flammable reactions.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Metal oxides.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid prolonged contact with eyes, skin and clothing. Avoid breathing dust, fumes.

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release of dust/fines to waterways to avoid potential bioaccumulation.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Recycle or dispose of in compliance with current legislation.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Recover the product by vacuuming, shoveling or sweeping. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Accumulation and dispersion of dust with an ignition source can cause a combustible dust explosion. Keep dust levels to a minimum and follow applicable regulations. May be a potential hazard under the following conditions: Small chunks, dust or fines in contact with water can generate flammable or toxic gases. These gases could present an explosion hazard in confined or poorly ventilated spaces. Finely divided metals (e.g, powders or wire) may have enough surface oxide to produce thermite reactions/explosions. If suspected of containing moisture, product should be thoroughly dried before being added to a molten bath. Otherwise, entrained moisture could expand explosively and spatter molten metal out of the bath. Risk of thermal burns on contact with molten product.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing dust, fume.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Mineral acids. Water. Corrosive substances in contact with metals may produce flammable hydrogen gas.

7.3. Specific End Use(s)

Retaining Wall and erosion control systems

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Chromium (7440-47-3)		
USA ACGIH	ACGIH OEL TWA	0.5 mg/m³ (inhalable particulate matter)
USA ACGIH	BEI (BLV)	0.7 µg/l Parameter: total Chromium - Medium: urine - Sampling time: end of shift at end of workweek (population based)
USA OSHA	OSHA PEL TWA	1 mg/m³
USA NIOSH	NIOSH REL (TWA)	0.5 mg/m³
USA IDLH	IDLH	250 mg/m³
Alberta	OEL TWA	0.5 mg/m³
British Columbia	OEL TWA	0.5 mg/m³ (total)
Manitoba	OEL TWA	0.5 mg/m³ (inhalable particulate matter)
New Brunswick	OEL TWA	0.5 mg/m³
Newfoundland & Labrador	OEL TWA	0.5 mg/m³ (inhalable particulate matter)
Nova Scotia	OEL TWA	0.5 mg/m³ (inhalable particulate matter)
Nunavut	OEL STEL	1.5 mg/m³ (metal)
Nunavut	OEL TWA	0.5 mg/m³ (metal)
Northwest Territories	OEL STEL	1.5 mg/m³ (metal)
Northwest Territories	OEL TWA	0.5 mg/m³ (metal)
Ontario	OEL TWAEV	0.5 mg/m³
Prince Edward Island	OEL TWA	0.5 mg/m³ (inhalable particulate matter)
Québec	VEMP (OEL TWAEV)	0.5 mg/m³
Saskatchewan	OEL STEL	1.5 mg/m³
Saskatchewan	OEL TWA	0.5 mg/m³

Yukon	OEL STEL	3 mg/m³
Yukon	OEL TWA	0.1 mg/m³
Manganese (7439-96-5)		
USA ACGIH	ACGIH OEL TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (Ceiling)	5 mg/m³ (fume)
USA NIOSH	NIOSH REL (TWA)	1 mg/m³ (fume)
USA NIOSH	NIOSH REL (STEL)	3 mg/m³
USA IDLH	IDLH	500 mg/m³
Alberta	OEL TWA	0.2 mg/m³
British Columbia	OEL TWA	0.2 mg/m³ (total) 0.02 mg/m³ (respirable)
Manitoba	OEL TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
New Brunswick	OEL TWA	0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)
Newfoundland & Labrador	OEL TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
Nova Scotia	OEL TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
Nunavut	OEL STEL	0.6 mg/m³
Nunavut	OEL TWA	0.2 mg/m³
Northwest Territories	OEL STEL	0.6 mg/m³
Northwest Territories	OEL TWA	0.2 mg/m³
Ontario	OEL TWAEV	0.2 mg/m³
Prince Edward Island	OEL TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
Québec	VEMP (OEL TWAEV)	0.2 mg/m³ (total dust and fume)
Saskatchewan	OEL STEL	0.6 mg/m³
Saskatchewan	OEL TWA	0.2 mg/m³
Yukon	OEL C	5 mg/m³
Tetrahydrofuran (109-99-9)		
USA ACGIH	ACGIH OEL TWA	50 ppm
USA ACGIH	ACGIH OEL STEL	100 ppm
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans,Skin - potential significant contribution to overall exposure by the cutaneous route
USA ACGIH	BEI (BLV)	2 mg/l Parameter: Tetrahydrofuran - Medium: urine - Sampling time: end of shift
USA OSHA	OSHA PEL TWA	590 mg/m³
USA OSHA	OSHA PEL TWA	200 ppm
USA NIOSH	NIOSH REL (TWA)	590 mg/m³
USA NIOSH	NIOSH REL (TWA)	200 ppm
USA NIOSH	NIOSH REL (STEL)	735 mg/m³
USA NIOSH	NIOSH REL (STEL)	250 ppm
USA IDLH	IDLH	2000 ppm (10% LEL)
Alberta	OEL STEL	295 mg/m³
Alberta	OEL STEL	100 ppm
Alberta	OEL TWA	147 mg/m³

Alberta	OEL TWA	50 ppm
British Columbia	OEL STEL	100 ppm
British Columbia	OEL TWA	50 ppm
Manitoba	OEL STEL	100 ppm
Manitoba	OEL TWA	50 ppm
New Brunswick	OEL STEL	100 ppm
New Brunswick	OEL TWA	50 ppm
Newfoundland & Labrador	OEL STEL	100 ppm
Newfoundland & Labrador	OEL TWA	50 ppm
Nova Scotia	OEL STEL	100 ppm
Nova Scotia	OEL TWA	50 ppm
Nunavut	OEL STEL	100 ppm
Nunavut	OEL TWA	50 ppm
Northwest Territories	OEL STEL	100 ppm
Northwest Territories	OEL TWA	50 ppm
Ontario	OEL TWAEV	100 ppm
Ontario	OEL TWAEV	50 ppm
Prince Edward Island	OEL STEL	100 ppm
Prince Edward Island	OEL TWA	50 ppm
Québec	VECD (OEL STEV)	100 ppm
Québec	VEMP (OEL TWAEV)	50 ppm
Saskatchewan	OEL STEL	100 ppm
Saskatchewan	OEL TWA	50 ppm
Yukon	OEL STEL	700 mg/m³
Yukon	OEL STEL	250 ppm
Yukon	OEL TWA	590 mg/m³
Yukon	OEL TWA	200 ppm

Methyl ethyl ketone (78-93-3)		
USA ACGIH	ACGIH OEL TWA	200 ppm
USA ACGIH	ACGIH OEL STEL	300 ppm
USA ACGIH	BEI (BLV)	2 mg/l Parameter: MEK - Medium: urine - Sampling time: end of shift (nonspecific)
USA OSHA	OSHA PEL TWA	590 mg/m³
USA OSHA	OSHA PEL TWA	200 ppm
USA NIOSH	NIOSH REL (TWA)	590 mg/m³
USA NIOSH	NIOSH REL (TWA)	200 ppm
USA NIOSH	NIOSH REL (STEL)	885 mg/m³
USA NIOSH	NIOSH REL (STEL)	300 ppm
USA IDLH	IDLH	3000 ppm
Alberta	OEL STEL	885 mg/m³
Alberta	OEL STEL	300 ppm
Alberta	OEL TWA	590 mg/m³
Alberta	OEL TWA	200 ppm
British Columbia	OEL STEL	100 ppm
British Columbia	OEL TWA	50 ppm
Manitoba	OEL STEL	300 ppm
Manitoba	OEL TWA	200 ppm
New Brunswick	OEL STEL	300 ppm
New Brunswick	OEL TWA	200 ppm
Newfoundland & Labrador	OEL STEL	300 ppm

Newfoundland & Labrador	OEL TWA	200 ppm
Nova Scotia	OEL STEL	300 ppm
Nova Scotia	OEL TWA	200 ppm
Nunavut	OEL STEL	300 ppm
Nunavut	OEL TWA	200 ppm
Northwest Territories	OEL STEL	300 ppm
Northwest Territories	OEL TWA	200 ppm
Ontario	OEL TWAEV	300 ppm
Ontario	OEL TWAEV	200 ppm
Prince Edward Island	OEL STEL	300 ppm
Prince Edward Island	OEL TWA	200 ppm
Québec	VECD (OEL STEV)	300 mg/m³
Québec	VECD (OEL STEV)	100 ppm
Québec	VEMP (OEL TWAEV)	150 mg/m³
Québec	VEMP (OEL TWAEV)	50 ppm
Saskatchewan	OEL STEL	300 ppm
Saskatchewan	OEL TWA	200 ppm
Yukon	OEL STEL	740 mg/m³
Yukon	OEL STEL	250 ppm
Yukon	OEL TWA	590 mg/m³
Yukon	OEL TWA	200 ppm

Acetone (67-64-1)		
USA ACGIH	ACGIH OEL TWA	250 ppm
USA ACGIH	ACGIH OEL STEL	500 ppm
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA ACGIH	BEI (BLV)	25 mg/l Parameter: Acetone - Medium: urine - Sampling time: end of shift (nonspecific)
USA OSHA	OSHA PEL TWA	2400 mg/m³
USA OSHA	OSHA PEL TWA	1000 ppm
USA NIOSH	NIOSH REL (TWA)	590 mg/m³
USA NIOSH	NIOSH REL (TWA)	250 ppm
USA IDLH	IDLH	2500 ppm (10% LEL)
Alberta	OEL STEL	1800 mg/m³
Alberta	OEL STEL	750 ppm
Alberta	OEL TWA	1200 mg/m³
Alberta	OEL TWA	500 ppm
British Columbia	OEL STEL	500 ppm
British Columbia	OEL TWA	250 ppm
Manitoba	OEL STEL	500 ppm
Manitoba	OEL TWA	250 ppm
New Brunswick	OEL STEL	500 ppm
New Brunswick	OEL TWA	250 ppm
Newfoundland & Labrador	OEL STEL	500 ppm
Newfoundland & Labrador	OEL TWA	250 ppm
Nova Scotia	OEL STEL	500 ppm
Nova Scotia	OEL TWA	250 ppm
Nunavut	OEL STEL	750 ppm
Nunavut	OEL TWA	500 ppm
Northwest Territories	OEL STEL	750 ppm
Northwest Territories	OEL TWA	500 ppm

Ontario	OEL TWAEV	500 ppm
Ontario	OEL TWAEV	250 ppm
Prince Edward Island	OEL STEL	500 ppm
Prince Edward Island	OEL TWA	250 ppm
Québec	VECD (OEL STEV)	2380 mg/m³
Québec	VECD (OEL STEV)	1000 ppm
Québec	VEMP (OEL TWAEV)	1190 mg/m³
Québec	VEMP (OEL TWAEV)	500 ppm
Saskatchewan	OEL STEL	750 ppm
Saskatchewan	OEL TWA	500 ppm
Yukon	OEL STEL	3000 mg/m³
Yukon	OEL STEL	1250 ppm
Yukon	OEL TWA	2400 mg/m³
Yukon	OEL TWA	1000 ppm

Cyclohexanone (108-94-1)		
USA ACGIH	ACGIH OEL TWA	20 ppm
USA ACGIH	ACGIH OEL STEL	50 ppm
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans,Skin - potential significant contribution to overall exposure by the cutaneous route
USA ACGIH	BEI (BLV)	80 mg/l Parameter: 1,2-Cyclohexanediol with hydrolysis - Medium: urine - Sampling time: end of shift at end of workweek (nonspecific, semi-quantitative) 8 mg/l Parameter: Cyclohexanol with hydrolysis - Medium: urine - Sampling time: end of shift (nonspecific, semi-quantitative)
USA OSHA	OSHA PEL TWA	200 mg/m³
USA OSHA	OSHA PEL TWA	50 ppm
USA NIOSH	NIOSH REL (TWA)	100 mg/m³
USA NIOSH	NIOSH REL (TWA)	25 ppm
USA IDLH	IDLH	700 ppm
Alberta	OEL STEL	200 mg/m³
Alberta	OEL STEL	50 ppm
Alberta	OEL TWA	80 mg/m³
Alberta	OEL TWA	20 ppm
British Columbia	OEL STEL	50 ppm
British Columbia	OEL TWA	20 ppm
Manitoba	OEL STEL	50 ppm
Manitoba	OEL TWA	20 ppm
New Brunswick	OEL STEL	50 ppm
New Brunswick	OEL TWA	20 ppm
Newfoundland & Labrador	OEL STEL	50 ppm
Newfoundland & Labrador	OEL TWA	20 ppm
Nova Scotia	OEL STEL	50 ppm
Nova Scotia	OEL TWA	20 ppm
Nunavut	OEL STEL	50 ppm
Nunavut	OEL TWA	20 ppm
Northwest Territories	OEL STEL	50 ppm
Northwest Territories	OEL TWA	20 ppm
Ontario	OEL TWAEV	50 ppm

Ontario	OEL TWAEV	20 ppm
Prince Edward Island	OEL STEL	50 ppm
Prince Edward Island	OEL TWA	20 ppm
Québec	VEMP (OEL TWAEV)	100 mg/m³
Québec	VEMP (OEL TWAEV)	25 ppm
Saskatchewan	OEL STEL	50 ppm
Saskatchewan	OEL TWA	20 ppm
Yukon	OEL STEL	200 mg/m³
Yukon	OEL STEL	50 ppm
Yukon	OEL TWA	200 mg/m³
Yukon	OEL TWA	50 ppm

Silica, amorphous (7631-86-9)		
USA OSHA	OSHA PEL TWA	6 mg/m³
USA OSHA	OSHA PEL TWA	20 mppcf (80mg/m³/%SiO_2)
USA NIOSH	NIOSH REL (TWA)	6 mg/m³
USA IDLH	IDLH	3000 mg/m³
Yukon	OEL TWA	300 particle/mL (as measured by Konimeter instrumentation (Silica) 20 mppcf (as measured by Impinger instrumentation (Silica) 2 mg/m³ (respirable mass (Silica)

8.2. Exposure Controls

Appropriate Engineering Controls: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear protective gloves. When needed, wear protective gloves to protect against thermal and/or mechanical hazards.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Solid
Appearance	:	White and black
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Evaporation Rate	:	No data available
Melting Point	:	2800 °F (1537.78 °C)
Freezing Point	:	No data available
Boiling Point	:	No data available
Flash Point	:	No data available
Auto-ignition Temperature	:	No data available

Decomposition Temperature	:	No data available
Flammability (solid, gas)	:	No data available
Lower Flammable Limit	:	No data available
Upper Flammable Limit	:	No data available
Vapor Pressure	:	No data available
Relative Vapor Density at 20°C	:	No data available
Relative Density	:	No data available
Specific Gravity	:	No data available
Solubility	:	No data available
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability:

Stable under recommended handling and storage conditions (see section 7). Metallic dusts may ignite or explode.

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, and incompatible materials. Avoid creating or spreading dust. Dust, chips, or ribbons can be ignited more easily, by an ignition source, by improper machining, or by spontaneous combustion if finely divided and damp.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Mineral acids. Water. Corrosive substances in contact with metals may produce flammable hydrogen gas.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Not classified.

LD50 and LC50 Data:

No additional information available

Skin Corrosion/Irritation: Not classified.

Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitization: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified. (All compounds classified as STOT-RE (Manganese) in this product act primarily through inhalation. However, because these compounds are not respirable and are bound within the product, the product itself is not classified.)

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.

Symptoms/Injuries After Skin Contact: Contact with fumes or metal powder will irritate skin. Contact with hot, molten metal will cause thermal burns.

Symptoms/Injuries After Eye Contact: During metal processing, dusts caused from physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes. Risk of thermal burns on contact with molten product.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: Overexposure to metal fumes may result metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude), disturbances in smell and/or taste, and possible discloration of skin, hair and mucous membranes; discoloration may become permanent.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Chromium (7440-47-3)	
LD50 Oral Rat	> 5000 mg/kg
LC50 Inhalation Rat	> 5.41 mg/l/4h
Manganese (7439-96-5)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.14 mg/l/4h
LC50 Inhalation Rat	> 5.14 mg/l/4h
Tetrahydrofuran (109-99-9)	
LD50 Oral Rat	1650 mg/kg (Source: JAPAN_GHS)
LD50 Dermal Rat	> 2000 mg/kg (Source: ECHA_API)
LC50 Inhalation Rat	> 14.7 mg/l/4h (Exposure time: 6h; No mortality)
LC50 Inhalation Rat	53.6 mg/l/4h
Methyl ethyl ketone (78-93-3)	
LD50 Oral Rat	2483 mg/kg (Source: JAPAN_GHS)
LD50 Dermal Rat	> 10 ml/kg
LD50 Dermal Rabbit	5000 mg/kg (Source: JAPAN_GHS)
LC50 Inhalation Rat	34.5 mg/l/4h
LC50 Inhalation Rat	11700 ppm/4h
ATE US/CA (dermal)	5,000.00 mg/kg body weight
Acetone (67-64-1)	
LD50 Oral Rat	5800 mg/kg (Species: Sprague-Dawley)
LD50 Dermal Rabbit	7400 mg/kg
LC50 Inhalation Rat	44 g/m³
Cyclohexanone (108-94-1)	
LD50 Oral Rat	1620 mg/kg
LD50 Dermal Rabbit	947 mg/kg (Source: JAPAN_GHS)
LC50 Inhalation Rat	> 6.2 mg/l/4h
LC50 Inhalation Rat	8000 ppm/4h
LC50 Inhalation Rat	32.1 mg/l/4h
Silica, amorphous (7631-86-9)	
LD50 Oral Rat	7900 mg/kg (Source: ATSDR)
LD50 Dermal Rabbit	> 2000 mg/kg (No deaths)
LC50 Inhalation Rat	> 58.8 mg/l/4h
Chromium (7440-47-3)	
IARC Group	3
Tetrahydrofuran (109-99-9)	
IARC Group	2B
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Cyclohexanone (108-94-1)	

IARC Group	3

Silica, amorphous (7631-86-9)	
IARC Group	3

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Not classified.

Manganese (7439-96-5)	
LC50 Fish 1	> 3.6 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [semi-static] Source: ECHA)
NOEC Chronic Fish	3.6 mg/l (Exposure time: 96h; Species: Oncorhynchus mykiss)

Tetrahydrofuran (109-99-9)	
LC50 Fish 1	1970 (1970 – 2360) mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	5930 mg/l
LC50 Fish 2	2700 (2700 – 3600) mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
NOEC Chronic Fish	216 mg/l

Methyl ethyl ketone (78-93-3)	
LC50 Fish 1	3130 (3130 – 3320) mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	520 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Crustacea [2]	5091 mg/l (Exposure time: 48 h - Species: Daphnia magna)
NOEC Chronic Algae	93 mg/l

Acetone (67-64-1)	
LC50 Fish 1	4144.846 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 - Crustacea [1]	1679.66 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 Fish 2	6210 (6210 – 8120) mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [2]	12600 (12600 – 12700) mg/l (Exposure time: 48 h - Species: Daphnia magna)

Cyclohexanone (108-94-1)	
LC50 Fish 1	481 (481 – 578) mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	800 mg/l

Silica, amorphous (7631-86-9)	
LC50 Fish 1	5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static] Source: IUCLID)
EC50 - Crustacea [1]	7600 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)

12.2. Persistence and Degradability

Strand Anchor	
Persistence and Degradability	Not established. Inorganic product which cannot be eliminated from water by biological purification processes.

Acetone (67-64-1)	
Persistence and Degradability	Readily biodegradable in water.

12.3. Bioaccumulative Potential

Strand Anchor	
Bioaccumulative Potential	Not established.

Tetrahydrofuran (109-99-9)	
BCF Fish 1	(will not bioconcentrate)
Partition coefficient n-octanol/water (Log Pow)	0.45 (at 25 °C (at pH 7)

Methyl ethyl ketone (78-93-3)

Partition coefficient n-octanol/water (Log Pow)	0.3 (at 40 °C (at pH 7)

Acetone (67-64-1)	
BCF Fish 1	(0.69 dimensionless)
Partition coefficient n-octanol/water (Log Pow)	-0.24

Cyclohexanone (108-94-1)	
BCF Fish 1	(will not bioconcentrate)
Partition coefficient n-octanol/water (Log Pow)	0.86 (at 25 °C)

Silica, amorphous (7631-86-9)	
BCF Fish 1	(no bioaccumulation expected)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Recover or recycle if possible.

Ecology - Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Not regulated for transport

14.2. In Accordance with IMDG

Not regulated for transport

14.3. In Accordance with IATA

Not regulated for transport

14.4. In Accordance with TDG

Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Chromium (7440-47-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %

Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 %

Tetrahydrofuran (109-99-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	1000 lb

Methyl ethyl ketone (78-93-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	5000 lb

Acetone (67-64-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	5000 lb

Cyclohexanone (108-94-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active	
CERCLA RQ	5000 lb

Silica, amorphous (7631-86-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. US State Regulations

California Proposition 65

WARNING: This product can expose you to Tetrahydrofuran, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Tetrahydrofuran (109-99-9)	X			

Chromium (7440-47-3)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Manganese (7439-96-5)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Tetrahydrofuran (109-99-9)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Methyl ethyl ketone (78-93-3)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Acetone (67-64-1)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Cyclohexanone (108-94-1)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

Silica, amorphous (7631-86-9)

U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List

15.3. Canadian Regulations

Chromium (7440-47-3)

Listed on the Canadian DSL (Domestic Substances List)

Manganese (7439-96-5)

Listed on the Canadian DSL (Domestic Substances List)

Tetrahydrofuran (109-99-9)

Listed on the Canadian DSL (Domestic Substances List)

Methyl ethyl ketone (78-93-3)

Listed on the Canadian DSL (Domestic Substances List)

Acetone (67-64-1)

Listed on the Canadian DSL (Domestic Substances List)

Cyclohexanone (108-94-1)

Listed on the Canadian DSL (Domestic Substances List)

Silica, amorphous (7631-86-9)

Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 01/24/2025

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)
AU_WES: Australia WES
CHEMVIEW: ChemView (U.S. Environmental Protection Agency)
EC_RAR: European Commission Renewal Assessment Report
EC_SCOEL: European Commission Scientific Committee on Occupational
FOOD_JOURN: Food Research Journal (1956)
IARC: The International Agency for Research on Cancer
IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles
IUCLID: International Uniform Chemical Information Database
JAPAN_GHS: Japan GHS Basis for Classification Data

Exposure Limits
ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports
ECHA_API: European Chemicals Agency API
ECHA_RAC: ECHA Committee for Risk Assessment
EFSA: European Food Safety Authority
EPA: U.S. Environmental Protection Agency
EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)
EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)
EPA_HPV: High Production Volume Chemicals (U.S. Environmental Protection Agency)
EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)
EU_CLH: European Union Harmonised Classification and Labelling Proposal
EU_RAR: European Union Risk Assessment Report
JP_J-CHECK: Japan J-Check
KR_NIER: South Korea National Institute of Environmental Research Evaluations
NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme
NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)
NLM_CIP: National Library of Medicine ChemID plus database
NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank
NLM_PUBMED: National Library of Medicine PubMed database
NTP: National Toxicology Program
NZ_CCID: New Zealand Chemical Classification and Information Database
OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)
OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)
WHO: World Health Organization

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

NA GHS SDS 2015 (Can, US)