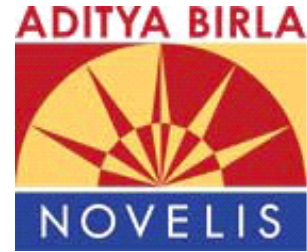


Safety Data Sheet



Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name

- **Uncoated Aluminum Metal, 5XXX Type Alloys**

Product Code

- 000043NOV

Product Description

- As shipped this product is not expected to cause all hazards represented by classifications. Coating on this material may cause irritation to all routes of exposure. Reproductive, lung and central nervous system target organs and metal fume fever associated with this material and corresponding classifications on this document are the result of processing such as: heating, welding, grinding, cutting or melting. Dust, chips, and molten metal are water reactive. Dusts and fumes from processing can cause irritation to eyes, skin, and upper respiratory tract, central nervous system depression and metal fume fever. Finely divided aluminum powder may pose an explosion hazard when in contact with air or oxygen.

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Relevant identified use(s)**
- Primary metal

1.3 Details of the supplier of the safety data sheet

Manufacturer

- Novelis Inc.
3560 Lenox Road
Suite 2000 Atlanta, GA 30326
United States

jason.hudson@novelis.com

Telephone (General) • 770-795-6778

1.4 Emergency telephone number

Manufacturer

- 1-800-424-9300 - CHEMTREC Within USA and Canada

Manufacturer

- +1 703-527-3887 - Outside USA and Canada

Section 2: Hazards Identification

EU/EEC

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]

2.1 Classification of the substance or mixture

CLP

- Specific Target Organ Toxicity Repeated Exposure 2 - H373
Hazardous to the aquatic environment Acute 1 - H400
Hazardous to the aquatic environment Chronic 2 - H411

2.2 Label Elements

CLP

WARNING



- Hazard statements** • H373 - May cause damage to organs through prolonged or repeated exposure.
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention** • P260 - Do not breathe dust or fumes.
P273 - Avoid release to the environment.
- Response** • P314 - Get medical advice/attention if you feel unwell.
P391 - Collect spillage.
- Storage/Disposal** • P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other Hazards

CLP

- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

UN GHS

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2.1 Classification of the substance or mixture

UN GHS

- Specific Target Organ Toxicity Repeated Exposure 1
- Specific Target Organ Toxicity Repeated Exposure 2
- Hazardous to the aquatic environment Acute 1
- Hazardous to the aquatic environment Chronic 2

2.2 Label elements

UN GHS

DANGER



- Hazard statements** • Causes damage to organs through prolonged or repeated exposure.
May cause damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life
Toxic to aquatic life with long lasting effects

Precautionary statements

- Prevention** • Do not breathe dust or fumes.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
- Response** • Get medical advice/attention if you feel unwell.
Collect spillage.
- Storage/Disposal** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

UN GHS

- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. According to the Globally Harmonized System for Classification and Labeling (GHS)

this product is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012

- Specific Target Organ Toxicity Repeated Exposure 1
- Specific Target Organ Toxicity Repeated Exposure 2
- Hazards Not Otherwise Classified - Health Hazards - Metal fume fever

2.2 Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • Causes damage to organs through prolonged or repeated exposure.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

- Prevention** • Do not breathe dust or fume.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.

- Response** • Get medical advice/attention if you feel unwell.

- Storage/Disposal** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.
-

Canada

According to: WHMIS

2.1 Classification of the substance or mixture

WHMIS

- Other Toxic Effects - D2A
- Other Toxic Effects - D2B

2.2 Label elements

WHMIS



- Other Toxic Effects - D2A
- Other Toxic Effects - D2B

2.3 Other hazards

WHMIS

- Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain. In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).
-
-

Section 3 - Composition/Information on Ingredients

3.1 Substances

- Material does not meet the criteria of a substance.

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Aluminum	CAS:7429-90-5 EC Number:231-072-3	> 86%	NDA	UN GHS: STOT RE 2 (Lungs, Inhl) EU CLP: STOT RE 2, H373 (Lungs, Inhl) OSHA HCS 2012: STOT RE 2 (Lungs, Inhl)	NDA
Magnesium	CAS:7439-95-4 EC Number:231-104-6 EU Index:012-001-00-3	0.1% TO 6%	NDA	UN GHS: Eye Irrit. 2; STOT SE 3: Resp. Irrit. EU CLP: Eye Irrit. 2, H319; STOT SE 3: Resp. Irrit., H335 OSHA HCS 2012: Eye Irrit. 2; STOT SE 3: Resp. Irrit.	NDA
Zinc	CAS:7440-66-6 EC Number:231-175-3 EU Index:030-001-00-1	< 2.8%	NDA	UN GHS: Skin Irrit. 3; Aquatic Acute 1; Aquatic Chronic 1 EU CLP: Annex VI, Table 3.1: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Not Classified	NDA
Manganese	CAS:7439-96-5 EC Number:231-105-1	< 1.8%	Ingestion/Oral-Rat LD50 • 9 g/kg	UN GHS: Skin Irrit. 3; Eye Irrit. 2; STOT RE 1 (CNS) EU CLP: STOT RE 1, H372 (CNS) OSHA HCS 2012: Eye Irrit. 2; STOT RE 1 (CNS)	NDA
Silicon	CAS:7440-21-3 EC Number:231-130-8	< 1.4%	Ingestion/Oral-Rat LD50 • 3160 mg/kg	UN GHS: Eye Irrit. 2B EU CLP: Not Classified OSHA HCS 2012: Eye Irrit. 2B	NDA
Iron	CAS:7439-89-6 EC Number:231-096-4	< 1%	Ingestion/Oral-Rat LD50 • 750 mg/kg	UN GHS: STOT RE 3: Resp. Irrit.; Aquatic Chronic 4 EU CLP: STOT RE 3: Resp. Irrit., H335; Aquatic Chronic 4, H413 OSHA HCS 2012: STOT RE 3: Resp. Irrit.	NDA
Copper	CAS:7440-50-8 EC Number:231-159-6	< 0.8%	NDA	UN GHS: Repr. 2; STOT SE 3: Resp. Irrit.; Eye Irrit. 2; Aquatic Acute 1 (M=100); Aquatic Chronic 1 (M=10) EU CLP: Repr. 2, H361; Eye Irrit. 2, H319; STOT SE 3: Resp. Irrit., H335; Aquatic Acute 1, H400 (M=100); Aquatic Chronic 1, H410 (M=10) OSHA HCS 2012: Repr. 2; STOT SE 3: Resp. Irrit.; Eye Irrit. 2	NDA
Chromium	CAS:7440-47-3 EC Number:231-157-5	< 0.35%	NDA	UN GHS: STOT SE 3: Resp. Irrit. EU CLP: STOT SE 3: Resp. Irrit., H335 OSHA HCS 2012: STOT SE 3: Resp. Irrit.	NDA

See Section 16 for full text of H-statements.

Section 4 - First Aid Measures

4.1 Description of first aid measures

- Inhalation**
- Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. If signs/symptoms continue, get medical attention.
- Skin**
- In case of burns with hot metal, rinse with plenty of cold water. If burns are severe, consult a physician. Wash skin thoroughly with cold water to remove residual aluminum dust or fume and other related surface coatings. If irritation develops and persists, get medical attention.
- Eye**
- Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If eye irritation persists: Get medical advice/attention.
- Ingestion**
- Rinse mouth. Do not give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to Physician**
- No specific actions or treatments recommended related to exposure to this material.

Section 5 - Firefighting Measures

5.1 Extinguishing media

- Suitable Extinguishing Media**
- In case of aluminum fires, use a class D dry-powder extinguisher (Lith-X).

- Unsuitable Extinguishing Media**
- Do not use water or halogenated extinguishing media.

5.2 Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- Not a fire hazard unless in particle form. Suspensions of aluminum dust in air may pose a severe explosion hazard. A potential for explosion exists for a mixture of fine and coarse particles if at least 15% to 20% of the material is finer than 44 microns (325 mesh). Buffing and polishing generate finer material than grinding, sawing and cutting.

- Hazardous Combustion Products**
- Aluminum oxides, Magnesium oxides, Manganese oxides.

5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection. Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- Aluminum in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be considered prior to handling. Avoid generation and spreading of dust. See Section 8 of the MSDS for Personal Protective Equipment.
- Emergency Procedures**
- As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. Keep unauthorized personnel away.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

- Containment/Clean-up Measures**
- Avoid generating dust.
SMALL DRY SPILLS: With clean shovel place material into clean, dry container and

cover loosely; move containers from spill area.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Use only with adequate ventilation. The lubricant that is coating the sheet can make it slippery. Because of the risk of explosion, aluminum ingots and metal scrap should be thoroughly dried prior to remelting. Use standard techniques to check metal temperature before handling. Hot aluminum does not present any warning color change. Exercise great caution, since the metal may be hot. For wetted coil of foil: Do not cut, transport or even approach any coil giving off a crackling sound or emitting steam vapor. Once a coil of foil has been partially or completely wetted: keep the coil cool until the interior is completely dry. If such cooling is impractical, leave the coil in place and keep people at least 30 meters away from it for at least 72 hours. Wear appropriate personal protective equipment, avoid direct contact. Do not breath dust/fume. Avoid contact with sharp edges and hot surfaces. Minimize dust generation and accumulation. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Take precautionary measures against static charges. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Store in a dry place. Keep away from incompatible materials.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines					
	Result	ACGIH	Canada Manitoba	NIOSH	OSHA
Chromium (7440-47-3)	Designated Substances	Not established	Present	Not established	Not established
	TWAs	0.5 mg/m ³ TWA	Not established	0.5 mg/m ³ TWA	1 mg/m ³ TWA
Copper (7440-50-8)	TWAs	0.2 mg/m ³ TWA (fume)	Not established	1 mg/m ³ TWA (dust and mist); 0.1 mg/m ³ TWA (fume)	0.1 mg/m ³ TWA (fume); 1 mg/m ³ TWA (dust and mist)
Silicon (7440-21-3)	TWAs	Not established	Not established	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Manganese	Ceilings	Not established	Not established	Not established	5 mg/m ³ Ceiling (fume)
	TWAs	0.02 mg/m ³ TWA (respirable fraction); 0.1 mg/m ³ TWA (inhalable fraction)	Not established	1 mg/m ³ TWA (fume)	Not established
	STELs	Not established	Not established	3 mg/m ³ STEL	Not established
Aluminum (7429-90-5)	TWAs	1 mg/m ³ TWA (respirable fraction)	Not established	10 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable dust)	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)

8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. It is recommended that dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment.

Personal Protective Equipment

Respiratory

- For limited exposure use an N95 dust mask. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety goggles.

Skin/Body

- Wear appropriate gloves. Wear long sleeves and/or protective coveralls.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
 NIOSH = National Institute of Occupational Safety and Health
 OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures
 TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Grey to silver solid with no odor.
Color	Grey to silver.	Odor	Odorless
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	482 to 660 C(899.6 to 1220 F)
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	2.2 to 2.9 Water=1	Water Solubility	Data lacking
Viscosity	Data lacking	Explosive Properties	Data lacking
Oxidizing Properties:	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Data lacking		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under normal temperatures and pressures.

10.3 Possibility of hazardous reactions

- Aluminum reacts with strong basic solutions, strong acidic solutions, and producing flammable hydrogen gas. Aluminum particles on contact with copper, lead, or iron oxides can react vigorously with release of heat if there is a source of ignition or intense heat.

10.4 Conditions to avoid

- Excess heat. Incompatible materials. For wetted coil of foil: In coils of aluminum foil immersed in water, a vigorous oxidation reaction may occur, producing hydrogen gas and heat. When the coils are removed from the cooling effect of the water, this reaction accelerates, large amounts of steam are produced, temperature rises significantly, hydrogen gas can reach concentrations over the lower explosive limit (4.1%): this can result in an explosive rupture of the coils. Rupturing of a coil may occur even when the coil is only partly immersed in water, and even if the immersion time is short.

10.5 Incompatible materials

- Molten aluminum may explode on contact with water, concrete, oxides of other materials or other oxidizing agents. In the form of particles, may explode when mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate.

10.6 Hazardous decomposition products

- Acrid fumes, Hydrogen.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Aluminum (> 86%)	7429-90-5	Reproductive: Ingestion/Oral-Mouse TDLo • 1260 mg/kg (multigeneration)); <i>Reproductive Effects:Effects on Newborn:Behavioral; Reproductive Effects:Effects on Newborn:Physical; Reproductive Effects:Effects on Newborn:Other postnatal measures or effects</i>
Copper (< 0.8%)	7440-50-8	Reproductive: Ingestion/Oral-Rat TDLo • 152 mg/kg (22W pre); <i>Reproductive Effects:Effects on Embryo or Fetus:Fetotoxicity (except death, e.g., stunted fetus); Reproductive Effects:Specific Developmental Abnormalities:Central nervous system</i>
Iron (< 1%)	7439-89-6	Acute Toxicity: Ingestion/Oral-Rat LD50 • 750 mg/kg; Blood:Changes in serum composition (e.g., TP, bilirubin cholesterol); Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Transaminases; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 105 mg/kg 5 Week(s)-Continuous; Liver:Tumors; Tumorigenic:Active as anti-cancer agent; Tumorigenic:Protects against induction of experimental tumors
Manganese (< 1.8%)	7439-96-5	Acute Toxicity: Ingestion/Oral-Rat LD50 • 9 g/kg; Irritation: Eye-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation; Reproductive: Ingestion/Oral-Rat TDLo • 90 mg/kg (18D post); <i>Reproductive Effects:Effects on Newborn:Growth statistics (e.g., reduced weight gain); Reproductive Effects:Effects on Newborn:Biochemical and metabolic; Reproductive Effects:Effects on Newborn:Other postnatal measures or effects</i>
Silicon (< 1.4%)	7440-21-3	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3160 mg/kg; Irritation: Eye-Rabbit • 3 mg • Mild irritation
Zinc (< 2.8%)	7440-66-6	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation

GHS Properties	Classification
Respiratory sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Serious eye damage/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Acute toxicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Aspiration Hazard	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Carcinogenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Skin corrosion/Irritation	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Skin sensitization	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
STOT-RE	EU/CLP • Specific Target Organ Toxicity Repeated Exposure 2 OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1; Specific Target Organ Toxicity Repeated Exposure 2 UN GHS • Specific Target Organ Toxicity Repeated Exposure 1; Specific Target Organ Toxicity Repeated Exposure 2
STOT-SE	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Toxicity for Reproduction	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking
Germ Cell Mutagenicity	EU/CLP • Data lacking OSHA HCS 2012 • Data lacking UN GHS • Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)

- Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible. Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

Chronic (Delayed)

- Inhalation of aluminum powder may cause lung problems, eg, pneumoconiosis (aluminosis). Workers chronically exposed to aluminum-containing dusts or fumes have developed severe pulmonary reactions including fibrosis, ephysema and pneumothorax.

Skin

- Acute (Immediate)**
 - Exposure to dust may cause mechanical irritation. Skin contact with hot metal can cause burns.
- Chronic (Delayed)**
 - No data available.

Eye

- Acute (Immediate)**
 - Exposure to dust may cause mechanical irritation. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.
- Chronic (Delayed)**
 - No data available.

Ingestion

- Acute (Immediate)**
 - Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.
- Chronic (Delayed)**
 - No data available.

Other

- Chronic (Delayed)**
 - Exposure to manganese dust and fumes can cause Manganism (Parkinson like disease)

Key to abbreviations

LD = Lethal Dose

TD = Toxic Dose

Section 12 - Ecological Information**12.1 Toxicity**

	CAS	
Uncoated Aluminum Metal, 5XXX Type Alloys	NDA	Aquatic Toxicity-Fish: 96 Hour(s) LC50 <i>Common Carp</i> 1.2 mg/L Comments: Iron (7439-89-6) Aquatic Toxicity-Crustacea: 48 Hour(s) EC50 <i>Water flea</i> 0.001 mg/L Comments: Copper (7440-50-8) EC50 <i>Water flea</i> 0.16 mg/L Comments: Zinc (7440-66-6) NOEC <i>Water flea</i> 0.9 mg/L Comments: Zinc (7440-66-6)

- Aluminum and its alloys in solid forms, such as ingots or manufactured items, do not present any hazard for the environment because metals are not biologically available. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

- No data available.

12.3 Bioaccumulative potential

- The product is not bioaccumulating.

12.4 Mobility in Soil

- Not relevant, due to the form of the product.

12.5 Results of PBT and vPvB assessment

- PBT and vPvB assessment has not been conducted for this material.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste

- Recover and reclaim or recycle, if practical. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not Regulated	NDA	NDA	NDA
TDG	NDA	Not Regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not Regulated	NDA	NDA	NDA
IATA/ICAO	NDA	Not Regulated	NDA	NDA	NDA

14.6 Special precautions for user

- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Data lacking.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • Acute, Chronic

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Aluminum	7429-90-5	Yes	No	Yes	No	Yes
Chromium	7440-47-3	Yes	No	Yes	No	Yes
Copper	7440-50-8	Yes	No	Yes	No	Yes
Iron	7439-89-6	Yes	No	Yes	No	Yes
Magnesium	7439-95-4	Yes	No	Yes	No	Yes
Manganese	7439-96-5	Yes	No	Yes	No	Yes
Silicon	7440-21-3	Yes	No	Yes	No	Yes
Zinc	7440-66-6	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Copper	7440-50-8	Uncontrolled product according to WHMIS classification criteria
• Chromium	7440-47-3	Uncontrolled product according to WHMIS classification criteria
• Manganese	7439-96-5	D2A (including powder)

• Aluminum	7429-90-5	B6 (powder); Uncontrolled product according to WHMIS classification criteria
• Silicon	7440-21-3	B4
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Uncontrolled product according to WHMIS classification criteria
• Magnesium	7439-95-4	B4, B6

Canada - WHMIS - Ingredient Disclosure List

• Copper	7440-50-8	1 %
• Chromium	7440-47-3	0.1 %
• Manganese	7439-96-5	1 %
• Aluminum	7429-90-5	1 %
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Copper	7440-50-8	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
• Chromium	7440-47-3	5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed

• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Copper	7440-50-8	1.0 % de minimis concentration
• Chromium	7440-47-3	1.0 % de minimis concentration
• Manganese	7439-96-5	1.0 % de minimis concentration
• Aluminum	7429-90-5	1.0 % de minimis concentration (dust or fume only)
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	1.0 % de minimis concentration (dust or fume only)
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

• Copper	7440-50-8	Not Listed
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• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed
• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Copper	7440-50-8	Not Listed
• Chromium	7440-47-3	Not Listed
• Manganese	7439-96-5	Not Listed
• Aluminum	7429-90-5	Not Listed
• Silicon	7440-21-3	Not Listed

• Zinc	7440-66-6	Not Listed
• Iron	7439-89-6	Not Listed
• Magnesium	7439-95-4	Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

15.3 Other Information

- California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated. This product contains trace amounts of lead (Pb) (< 0.1 %). Any process resulting exposure to more than 0.5 mg/m³ of metal dust per day may result in a daily dose of lead of over 0.5 µg/day, the dose above which the "California Safe Drinking Water and Toxic Enforcement Act" of 1986 requires notification. Refer to the appropriate regulation notification wording guidelines. The dose is not considered dangerous for health according to current toxicology studies.

Section 16 - Other Information

Relevant Phrases (code & full text)

- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation
- H361 - Suspected of damaging fertility or the unborn child.
- H372 - Causes damage to organs through prolonged or repeated exposure.
- H410 - Very toxic to aquatic life with long lasting effects
- H413 - May cause long lasting harmful effects to aquatic life

Revision Date

- 24/September/2015

Preparation Date

- 13/September/2013

Other Information

- Issued By: 315-345-2212.

Disclaimer/Statement of Liability

- The information in this SDS was obtained from sources which we believe are reliable but cannot guarantee. Additionally, your use of this information is beyond our control and may be beyond our knowledge. Therefore, the information is provided without any representation or warranty express or implied.

Key to abbreviations

NDA = No data available