ALASKAN COPPER COMPANIES, INC.
Stainless Steel Aluminum

Aluminum Alloys

Safety Data Sheet

Date of issue: 8/10/22 Version: 2.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier
Product Form: Mixture
Product Name: Aluminum Alloys
Synonyms: 1XXX thru 7XXX Series

1.2. Intended Use of the Product
Use of the Substance/Mixture: No use is specified.

1.3. Name, Address, Telephone of the Responsible Party
Alaskan Copper Companies, Inc.
27402 72nd Avenue South
Kent, Washington 98032
T (206) 623-5800; (800) 552-7661
acbsea@alaskancopper.com
http://alaskancopper-com

1.4. Emergency Telephone Number
Emergency Number: (800) 552-7661
In the case of fire, explosion or spill, call 911

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture
GHS-US classification Not classified

2.2. Label Elements
GHS-US Labeling No labeling applicable

2.3. Other Hazards

Solid metal products are generally classified as "articles" and do not constitute hazards in solid form. The materials present in this product in their powdered forms present aquatic toxicity to the environment, pyrophoricity, flammability, self-heating capabilities, carcinogenicity, water reactivity, and acute toxicity. When processed or where dust is generated a combustible dust hazard may be present. Avoid generating dust, generating sparks, ignition sources, and take all precautions. 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. Under normal use and handling of the solid form of this material there are few health hazards. Cutting, welding, melting, grinding etc. of these materials will produce dust, fume or particulate containing the component elements of these materials. Exposure to the dust, fume or particulate of these materials may present significant health hazards. Exposure to dust or fume may cause irritation of the eyes, skin and respiratory tract. Fine particulates dispersed in air may present an explosion hazard.

2.4. Unknown Acute Toxicity (GHS-US) No data available

*** GHS - Globally Harmonized System of Classification and Labeling of Chemicals**

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances **Not applicable**

3.2. Mixture

Name	Product Identifier	% (w/w)	GHS-US classification
Aluminum	(CAS No) 7429-90-5	>75	Comb. Dust Flam. Sol. 1, H228 Water-react. 2, H261
Silicon	(CAS No) 7440-21-3	≤17	Comb. Dust
Zinc	(CAS No) 7440-66-6	≤11	Comb. Dust
Iron	(CAS No) 7439-89-6	≤11	Comb. Dust Flam. Sol. 1, H228 Self-heat. 1, H251
Copper	(CAS No) 7440-50-8	≤10	Comb. Dust Aquatic Acute 1, H400 Aquatic Chronic 3, H412
Magnesium	(CAS No) 7439-95-4	≤8	Comb. Dust Flam. Sol. 1, H228 Self-heat. 1, H251 Water-react. 2, H261
Nickel	(CAS No) 7440-02-0	≤3	Comb. Dust Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 Aquatic Chronic 3, H412
Manganese	(CAS No) 7439-96-5	≤3	Comb. Dust
Silver	(CAS No) 7440-22-4	≤1	Comb. Dust
Chromium	(CAS No) 7440-47-3	≤0.5	Comb. Dust
Cobalt	(CAS No) 7440-48-4	≤0.25	Comb. Dust Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Resp. Sens. 1B, H334 Skin Sens. 1, H317 Carc. 1B, H350 Repr. 2, H361 Aquatic Chronic 1, H410
Cadmium	(CAS No) 7440-43-9	≤0.03	Acute Tox. 2 (Inhalation: dust,mist), H330 Muta. 2, H341 Carc. 1B, H350 Repr. 2, H361 STOT RE 1, H372 Aquatic Acute 1, H400

Full text of H-phrases: see section 16

More than one of the ranges of concentration prescribed by the Controlled Products Regulations has been used where necessary, due to varying composition.

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

General: IF exposed or concerned: Get medical advice/attention. Never give anything by mouth to an unconscious person. Inhalation: When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. 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 15 minutes. Wash with plenty of soap and water. Wash contaminated clothing before reuse. Obtain medical attention if irritation persists.

Eye Contact: Removal of solidified molten material from the eyes requires medical assistance. Immediately rinse with water for a prolonged period (at least 15 minutes) while holding the eyelids wide open. 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. Immediately call a POISON CENTER or doctor/physician.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Welding, cutting, or processing this material may release dust or fumes that are hazardous.
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: May cause an allergic skin reaction. Dust from physical alteration of this product causes skin irritation. Causes severe skin burns. Contact with fumes or metal powder will irritate skin. Contact with hot, molten metal will cause thermal burns. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Mechanical damage via flying particles and chipped slag is possible.
Eye Contact: Dust may cause mechanical irritation to eyes, nose, throat, and lungs.
Ingestion: Ingestion is likely to be harmful or have adverse effects.
Chronic Symptoms: In massive form, no hazard exists. If physically altered to present slivers, ribbons, dusts or fumes from molten material: Aluminum: Inhalation of finely divided aluminum powder may cause pulmonary fibrosis. Inhalation of Nickel compounds has been shown in studies to provide an increased incidence of cancer of the nasal cavity, lung and possibly larynx in nickel refinery workers. Nickel: May cause a form of dermatitis known as nickel itch and intestinal irritation, which may cause disorders, convulsions and asphyxia. Copper: Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure. Silicon: Can cause chronic bronchitis and narrowing of the airways. Zinc: Prolonged exposure to high concentrations of zinc fumes may cause "zinc shakes", an involuntary twitching of the muscles. Otherwise, zinc is non-toxic. Silver: Chronic skin contact or ingestion of silver dust, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes. Inhalation of iron oxide fumes undergoing decomposition may cause irritation and flu-like symptoms, otherwise iron oxide is not hazardous. . Manganese: Chronic exposure can cause inflammation of the lung tissue, scarring the lungs (pulmonary fibrosis). Chronic exposure to excessive manganese levels can lead to a variety of psychiatric and motor disturbances, termed manganism. Chromium: Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of epidemiological investigations on workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion.

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

If exposed or concerned, get medical advice and attention.

SECTION 5 FIRE FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire. Dry sand; Class D Extinguishing Agent (for metal powder fires).
Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire. Do not use water when molten material is involved, may react violently or explosively on contact with water.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: A non-combustible material, not considered flammable but will melt above 1470F (800C).
Explosion Hazard: In molten state: reacts violently with water (moisture).
Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Under fire conditions, hazardous fumes will be present.

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Hazardous Combustion Products: Oxides of tin. Oxides of nickel. Oxides of copper. Oxides of silicone and carbon. Oxides of lead. Oxides of aluminum. Oxides of silver.

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: Do not handle until all safety precautions have been read and under stood. Do not breathe vapors from molten product.

6.1.1. For Non-Emergency Personnel

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

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely.

For particulates and dust: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8. Vacuum must be fitted with HEPA filter to prevent release of particulates during clean-up.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: May generate flammable/explosive dusts or turnings when brushed, machined or ground. Use care during processing to minimize generation of dust. Where excessive dust may result, use approved respiratory protection equipment. Heating of product can release toxic or irritating fumes; ensure proper ventilation is employed, proper precautions are enforced, and applicable regulations are followed. Inhalation of fumes may cause metal fume fever.

Precautions for Safe Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fumes.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areaswith mild soap and water before eating, drinking, or smoking and again when leaving work. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place.

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

7.3. Specific End Use(s)

No use is specified.

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), Canadian provincial governments, or the Mexican government.

Aluminum (7429-90-5)		
USA ACGIH	**ACGIH TWA (mg/m³)**	**1 mg/m³ (respirable fraction)**
USA ACGIH	**ACGIH chemical category**	**Not Classifiable as a Human Carcinogen**
USA OSHA	**OSHA PEL (TWA) (mg/m³)**	**15 mg/m³ (total dust)** **5 mg/m³ (respirable fraction)**
USA NIOSH	**NIOSH REL (TWA) (mg/m³)**	**10 mg/m³ (total dust)** **5 mg/m³ (respirable dust)**
Alberta	**OEL TWA (mg/m³)**	**10 mg/m³ (dust)**
British Columbia	**OEL TWA (mg/m³)**	**1.0 mg/m³ (respirable)**
Manitoba	**OEL TWA (mg/m³)**	**1 mg/m³ (respirable fraction)**
New Brunswick	**OEL TWA (mg/m³)**	**10 mg/m³ (metal dust)**
Newfoundland & Labrador	**OEL TWA (mg/m³)**	**1 mg/m³ (respirable fraction)**
Nova Scotia	**OEL TWA (mg/m³)**	**1 mg/m³ (respirable fraction)**
Nunavut	**OEL STEL (mg/m³)**	**20 mg/m³**
Nunavut	**OEL TWA (mg/m³)**	**10 mg/m³**
Northwest Territories	**OEL STEL (mg/m³)**	**20 mg/m³ (metal-dust)**
Northwest Territories	**OEL TWA (mg/m³)**	**10 mg/m³ (metal-dust)**
Ontario	**OEL TWA (mg/m³)**	**1 mg/m³ (respirable)**
Prince Edward Island	**OEL TWA (mg/m³)**	**1 mg/m³ (respirable fraction)**
Québec	**VEMP (mg/m³)**	**10 mg/m³**
Saskatchewan	**OEL STEL (mg/m³)**	**20 mg/m³ (dust)**
Saskatchewan	**OEL TWA (mg/m³)**	**10 mg/m³ (dust)**
Silicon (7440-21-3)		
USA OSHA	**OSHA PEL (TWA) (mg/m³)**	**15 mg/m³ (total dust)** **5 mg/m³ (respirable fraction)**
USA NIOSH	**NIOSH REL (TWA) (mg/m³)**	**10 mg/m³ (total dust)** **5 mg/m³ (respirable dust)**
British Columbia	**OEL TWA (mg/m³)**	**10 mg/m³ (total dust)** **3 mg/m³ (respirable fraction)**
New Brunswick	**OEL TWA (mg/m³)**	**10 mg/m³**
Nunavut	**OEL TWA (mg/m³)**	**5 mg/m³ (respirable mass)** **10 mg/m³ (total mass)**
Northwest Territories	**OEL STEL (mg/m³)**	**20 mg/m³**
Northwest Territories	**OEL TWA (mg/m³)**	**10 mg/m³**
Québec	**VEMP (mg/m³)**	**10 mg/m³ (containing no Asbestos and <1% Crystalline silica-total dust)**
Saskatchewan	**OEL STEL (mg/m³)**	**20 mg/m³**
Saskatchewan	**OEL TWA (mg/m³)**	**10 mg/m³**
Yukon	**OEL STEL (mg/m³)**	**20 mg/m³**
Yukon	**OEL TWA (mg/m³)**	**30 mppcf** **10 mg/m³**
Copper (7440-50-8)		
USA ACGIH	**ACGIH TWA (mg/m³)**	**0.2 mg/m³ (fume)**
USA OSHA	**OSHA PEL (TWA) (mg/m³)**	**0.1 mg/m³ (fume)** **1 mg/m³ (dust and mist)**
USA NIOSH	**NIOSH REL (TWA) (mg/m³)**	**1 mg/m³ (dust and mist)** **0.1 mg/m³ (fume)**
USA IDLH	**US IDLH (mg/m³)**	**100 mg/m³ (dust, fume and mist)**

Alberta	OEL TWA (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
British Columbia	OEL TWA (mg/m³)	1 mg/m³ (dust and mist) 0.2 mg/m³ (fume)
Manitoba	OEL TWA (mg/m³)	0.2 mg/m³ (fume)
New Brunswick	OEL TWA (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Newfoundland & Labrador	OEL TWA (mg/m³)	0.2 mg/m³ (fume)
Nova Scotia	OEL TWA (mg/m³)	0.2 mg/m³ (fume)
Nunavut	OEL STEL (mg/m³)	0.6 mg/m³ (fume) 2 mg/m³ (dust and mist)
Nunavut	OEL TWA (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Northwest Territories	OEL STEL (mg/m³)	3 mg/m³ (dust and mist) 0.6 mg/m³ (fume)
Northwest Territories	OEL TWA (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Ontario	OEL TWA (mg/m³)	0.2 mg/m³ (fume)
		1 mg/m³ (dust and mist)
Prince Edward Island	OEL TWA (mg/m³)	0.2 mg/m³ (fume)
Québec	VEMP (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Saskatchewan	OEL STEL (mg/m³)	0.6 mg/m³ (fume) 3 mg/m³ (dust and mist)
Saskatchewan	OEL TWA (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Yukon	OEL STEL (mg/m³)	0.2 mg/m³ (fume) 2 mg/m³ (dust and mist)
Yukon	OEL TWA (mg/m³)	0.2 mg/m³ (fume) 1 mg/m³ (dust and mist)
Cobalt (7440-48-4)		
USA ACGIH	ACGIH TWA (mg/m³)	0.02 mg/m³
USA ACGIH	ACGIH chemical category	Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA ACGIH	Biological Exposure Indices (BEI)	15 µg/l (Medium: urine - Time: end of shift at end of workweek - Parameter: Cobalt (nonspecific)
USA OSHA	OSHA PEL (TWA) (mg/m³)	0.1 mg/m³ (dust and fume)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.05 mg/m³ (dust and fume)
USA IDLH	US IDLH (mg/m³)	20 mg/m³ (dust and fume)
Alberta	OEL TWA (mg/m³)	0.02 mg/m³
British Columbia	OEL TWA (mg/m³)	0.02 mg/m³
Manitoba	OEL TWA (mg/m³)	0.02 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.02 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.02 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.02 mg/m³
Nunavut	OEL STEL (mg/m³)	0.3 mg/m³ (dust and fume)
Nunavut	OEL TWA (mg/m³)	0.1 mg/m³ (metal-dust and fume)
Northwest Territories	OEL STEL (mg/m³)	0.06 mg/m³
Northwest Territories	OEL TWA (mg/m³)	0.02 mg/m³
Ontario	OEL TWA (mg/m³)	0.02 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	0.02 mg/m³
Québec	VEMP (mg/m³)	0.02 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.06 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.02 mg/m³

Yukon	**OEL STEL (mg/m³)**	**0.15 mg/m³ (dust and fume)**
Yukon	OEL TWA (mg/m³)	0.05 mg/m³ (dust and fume)
Manganese (7439-96-5)		
USA ACGIH	ACGIH TWA (mg/m³)	0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	5 mg/m³ (fume)
USA NIOSH	NIOSH REL (TWA) (mg/m³)	1 mg/m³ (fume)
USA NIOSH	NIOSH REL (STEL) (mg/m³)	3 mg/m³
USA IDLH	US IDLH (mg/m³)	500 mg/m³
Alberta	OEL TWA (mg/m³)	0.2 mg/m³
British Columbia	OEL TWA (mg/m³)	0.2 mg/m³
Manitoba	OEL TWA (mg/m³)	0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)
New Brunswick	OEL TWA (mg/m³)	0.2 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m³)	0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)
Nunavut	OEL Ceiling (mg/m³)	5 mg/m³
Nunavut	OEL STEL (mg/m³)	3 mg/m³ (fume)
Nunavut	OEL TWA (mg/m³)	1 mg/m³ (fume)
Northwest Territories	OEL STEL (mg/m³)	0.6 mg/m³
Northwest Territories	OEL TWA (mg/m³)	0.2 mg/m³
Ontario	OEL TWA (mg/m³)	0.2 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)
Québec	VEMP (mg/m³)	0.2 mg/m³ (total dust and fume)
Saskatchewan	OEL STEL (mg/m³)	0.6 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.2 mg/m³
Yukon	OEL Ceiling (mg/m³)	5 mg/m³
Nickel (7440-02-0)		
USA ACGIH	ACGIH TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
USA ACGIH	ACGIH chemical category	Not Suspected as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.015 mg/m³
USA IDLH	US IDLH (mg/m³)	10 mg/m³
Alberta	OEL TWA (mg/m³)	1.5 mg/m³
British Columbia	OEL TWA (mg/m³)	0.05 mg/m³
Manitoba	OEL TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
New Brunswick	OEL TWA (mg/m³)	1 mg/m³
Newfoundland &	OEL TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
Nunavut	OEL STEL (mg/m³)	2 mg/m³
Nunavut	OEL TWA (mg/m³)	1 mg/m³
Northwest Territories	OEL STEL (mg/m³)	3 mg/m³ (inhalable fraction)
Northwest Territories	OEL TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
Ontario	OEL TWA (mg/m³)	1 mg/m³ (inhalable)
Prince Edward Island	OEL TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
Québec	VEMP (mg/m³)	1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	3 mg/m³ (inhalable fraction)
Saskatchewan	OEL TWA (mg/m³)	1.5 mg/m³ (inhalable fraction)
Yukon	OEL STEL (mg/m³)	3 mg/m³
Yukon	OEL TWA (mg/m³)	1 mg/m³
Silver (7440-22-4)		

USA ACGIH	ACGIH TWA (mg/m³)	0.1 mg/m³ (dust and fume)
USA OSHA	OSHA PEL (TWA) (mg/m³)	0.01 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.01 mg/m³ (dust)
USA IDLH	US IDLH (mg/m³)	10 mg/m³ (dust)
Alberta	OEL TWA (mg/m³)	0.1 mg/m³
British Columbia	OEL STEL (mg/m³)	0.03 mg/m³
British Columbia	OEL TWA (mg/m³)	0.01 mg/m³
Manitoba	OEL TWA (mg/m³)	0.1 mg/m³ (dust and fume)
New Brunswick	OEL TWA (mg/m³)	0.1 mg/m³
Newfoundland &	OEL TWA (mg/m³)	0.1 mg/m³ (dust and fume)
Nova Scotia	OEL TWA (mg/m³)	0.1 mg/m³ (dust and fume)

Nunavut	OEL STEL (mg/m³)	0.3 mg/m³
Nunavut	OEL TWA (mg/m³)	0.1 mg/m³
Northwest Territories	OEL STEL (mg/m³)	0.3 mg/m³ (metal)
Northwest Territories	OEL TWA (mg/m³)	0.1 mg/m³ (metal)
Ontario	OEL TWA (mg/m³)	0.1 mg/m³ (dust and fume)
Prince Edward Island	OEL TWA (mg/m³)	0.1 mg/m³ (dust and fume)
Québec	VEMP (mg/m³)	0.1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.3 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.1 mg/m³
Yukon	OEL STEL (mg/m³)	0.03 mg/m³
Yukon	OEL TWA (mg/m³)	0.01 mg/m³
Chromium (7440-47-3)		
USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.5 mg/m³
USA IDLH	US IDLH (mg/m³)	250 mg/m³
Alberta	OEL TWA (mg/m³)	0.5 mg/m³
British Columbia	OEL TWA (mg/m³)	0.5 mg/m³
Manitoba	OEL TWA (mg/m³)	0.5 mg/m³
New Brunswick	OEL TWA (mg/m³)	0.5 mg/m³
Newfoundland &	OEL TWA (mg/m³)	0.5 mg/m³
Nova Scotia	OEL TWA (mg/m³)	0.5 mg/m³
Nunavut	OEL STEL (mg/m³)	1.5 mg/m³
Nunavut	OEL TWA (mg/m³)	0.5 mg/m³
Northwest Territories	OEL STEL (mg/m³)	1.5 mg/m³ (metal)
Northwest Territories	OEL TWA (mg/m³)	0.5 mg/m³ (metal)
Ontario	OEL TWA (mg/m³)	0.5 mg/m³
Prince Edward Island	OEL TWA (mg/m³)	0.5 mg/m³
Québec	VEMP (mg/m³)	0.5 mg/m³
Saskatchewan	OEL STEL (mg/m³)	1.5 mg/m³
Saskatchewan	OEL TWA (mg/m³)	0.5 mg/m³
Yukon	OEL STEL (mg/m³)	3.0 mg/m³
Yukon	OEL TWA (mg/m³)	0.1 mg/m³
Cadmium (7440-43-9)		
USA ACGIH	ACGIH TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable fraction)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen
USA ACGIH	Biological Exposure Indices (BEI)	5 µg/g Kreatinin (Medium: urine - Time: not critical - Parameter: Cadmium (background) 5 µg/l (Medium: blood - Time: not critical -

USA OSHA	OSHA PEL (TWA) (mg/m³)	0.1 mg/m³ (fume) 0.2 mg/m³ (dust) 5 µg/m³
USA OSHA	OSHA PEL (Ceiling) (mg/m³)	0.3 mg/m³ (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect- fume) 0.6 mg/m³ (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect- dust)

USA IDLH	US IDLH (mg/m³)	9 mg/m³ (dust)
Alberta	OEL TWA (mg/m³)	0.01 mg/m³
British Columbia	OEL TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable)
Manitoba	OEL TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable fraction)
New Brunswick	OEL TWA (mg/m³)	0.01 mg/m³ (inhalable fraction) 0.002 mg/m³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable fraction)
Nunavut	OEL STEL (mg/m³)	0.2 mg/m³ (dust)
Nunavut	OEL TWA (mg/m³)	0.05 mg/m³ (dust)
Northwest Territories	OEL STEL (mg/m³)	0.03 mg/m³ (total fraction) 0.006 mg/m³ (respirable fraction)
Northwest Territories	OEL TWA (mg/m³)	0.01 mg/m³ (total fraction) 0.002 mg/m³ (respirable fraction)
Ontario	OEL TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable)
Prince Edward Island	OEL TWA (mg/m³)	0.01 mg/m³ 0.002 mg/m³ (respirable fraction)
Québec	VEMP (mg/m³)	0.025 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.03 mg/m³ (total) 0.006 mg/m³ (respirable fraction)
Saskatchewan	OEL TWA (mg/m³)	0.01 mg/m³ (total) 0.002 mg/m³ (respirable fraction)
Yukon	OEL STEL (mg/m³)	0.15 mg/m³ (dust)
Yukon	OEL TWA (mg/m³)	0.05 mg/m³ (dust)

8.2. Exposure Controls

Appropriate Engineering Controls: Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective clothing. Gloves. Safety glasses. Dust formation: dust mask. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Chemically resistant materials and fabrics. With molten material wear thermally protective clothing.

Hand Protection: Wear chemically resistant protective gloves. If material is hot, wear thermally resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing. Wash contaminated clothing before reuse.

Respiratory Protection: Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	**Solid**
Appearance	**Gray, silver**
Odor	**None**
Odor Threshold	**Not available**
pH	**Not available**
Evaporation Rate	**Not available**
Melting Point	**476.7 - 660 °C (890.06 - 1220 °F)**
Freezing Point	**Not available**
Boiling Point	**2450 °C (4442 °F)**
Flash Point	**Not applicable**
Auto-ignition Temperature	**Not available**
Decomposition Temperature	**Not available**
Flammability (solid, gas)	**Not available**
Lower Flammable Limit	**Not available**
Upper Flammable Limit	**Not available**
Vapor Pressure	**Not available**
Relative Vapor Density at 20 °C	**Not available**
Relative Density	**Not available**
Specific gravity / density	**2.5-3.13**
Specific Gravity	**Not available**
Solubility	**Insoluble in water.**
Partition Coefficient: N-Octanol/Water	**Not available**
Viscosity	**Not available**
Explosion Data –	
Sensitivity to Mechanical Impact	**Not expected to present an explosion hazard due to mechanical impact.**
Sensitivity to Static Discharge	**Take precautions against static discharge where there is a risk of dust explosion.,Static discharge could act as an ignition source.**

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).

10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

10.4. Conditions to Avoid: Avoid creating or spreading dust. Sparks, heat, open flame and other sources of ignition. 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: When molten: water. Strong acids, strong bases, strong oxidizers. Alkalis. Metal oxides. Moisture. Corrosive substances in contact with metals may produce flammable hydrogen gas.

10.6. Hazardous Decomposition Products: With acids, aluminum metals, or ammonium salts may react to form toxic vapors. May form solid compounds releasing heat. Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity: Oral:	**Not classified Inhalation: dust,mist: Not classified.**
LD50 and LC50 Data:	**Not available**
Skin Corrosion/Irritation:	**Not classified**
Serious Eye Damage/Irritation:	**Not classified**
Respiratory/Skin Sensitization:	**Not classified**
Germ Cell Mutagenicity:	**Not classified**
Teratogenicity:	**Not available**
Carcinogenicity:	**Not classified**
Reproductive Toxicity:	**Not classified**
Specific Target Organ Toxicity (Repeated Exposure):	**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: May cause an allergic skin reaction. Dust from physical alteration of this product causes skin irritation. Causes severe skin burns. Contact with fumes or metal powder will irritate skin. Contact with hot, molten metal will cause thermal burns. Dust may cause irritation in skin folds or by contact in combination with tight clothing. Mechanical damage via flying particles and chipped slag is possible.

Symptoms/Injuries After Eye Contact: Dust may cause mechanical irritation to eyes, nose, throat, and lungs.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: In massive form, no hazard exists. If physically altered to present slivers, ribbons, dusts or fumes from molten material: Aluminum: **Inhalation of finely divided aluminum powder may cause pulmonary fibrosis.** Nickel: **May cause a form of dermatitis known as nickel itch and intestinal irritation, which may cause disorders, convulsions and asphyxia. Inhalation of Nickel compounds has been shown in studies to provide an increased incidence of cancer of the nasal cavity, lung and possibly larynx in nickel refinery workers.** Copper: **Overexposure to fumes may cause metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude); metallic or sweet taste; discoloration of skin and hair. Tissue damage of mucous membranes may follow chronic dust exposure.** Silicon: **Can cause chronic bronchitis and narrowing of the airways.** Zinc: **Prolonged exposure to high concentrations of zinc fumes may cause "zinc shakes", an involuntary twitching of the muscles. Otherwise, zinc is non-toxic.** Silver: **Chronic skin contact or ingestion of silver dust, salts or fume can result in a condition known as Argyria, a condition with bluish pigmentation of the skin and eyes. Inhalation of iron oxide fumes undergoing decomposition may cause irritation and flu-like symptoms, otherwise iron oxide is not hazardous.** Manganese: **Chronic exposure can cause inflammation of the lung tissue, scarring the lungs (pulmonary fibrosis). Chronic exposure to excessive manganese levels can lead to a variety of psychiatric and motor disturbances, termed manganism.** Chromium: **Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of epidemiological investigations on workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion.**

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Silicon (7440-21-3)	
LD50 Oral Rat	3160 mg/kg
Cobalt (7440-48-4)	
LD50 Oral Rat	215.9 - 1140 mg/kg
LC50 Inhalation Rat	> 10 mg/l (Exposure time: 1 h)
Manganese (7439-96-5)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.14 mg/l/4h
Nickel (7440-02-0)	
LD50 Oral Rat	> 9000 mg/kg
Silver (7440-22-4)	
LD50 Oral Rat	> 2000 mg/kg
Magnesium (7439-95-4)	
LD50 Oral Rat	230 mg/kg
Iron (7439-89-6)	
LD50 Oral Rat	98.6 g/kg
Chromium (7440-47-3)	
LD50 Oral Rat	> 5000 mg/kg
LC50 Inhalation Rat	> 5.41 mg/l/4h

Cadmium (7440-43-9)	
LD50 Oral Rat	1140 mg/kg
LC50 Inhalation Rat	25 mg/m³ (Exposure time: 30 min)
LC50 Inhalation Rat	0.0031 mg/l/4h

ATE US (dust, mist)	0.05 mg/l/4h
Cobalt (7440-48-4)	
IARC Group	2B
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Nickel (7440-02-0)	
IARC Group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
Chromium (7440-47-3)	
IARC Group	3
Cadmium (7440-43-9)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
OSHA Specifically Regulated Carcinogen List	In OSHA Specifically Regulated Carcinogen list.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity No additional information available

Copper (7440-50-8)	
LC50 Fish 1	0.0068 (0.0068 - 0.0156) mg/l (Exposure time: 96 h - Species: Pimephales
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 1	0.0426 (0.0426 - 0.0535) mg/l (Exposure time: 72 h - Species: Pseudokirchneriella
LC 50 Fish 2	0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Other Aquatic Organisms 2	0.031 (0.031 - 0.054) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata
Cobalt (7440-48-4)	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
Manganese (7439-96-5)	
NOEC chronic fish	3.6 mg/l (Exposure time: 96h; Species: Oncorhynchus mykiss)
Nickel (7440-02-0)	
LC50 Fish 1	100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	121.6 µg/l (Exposure time: 48h - Species: Ceriodaphnia dubia [static])
LC 50 Fish 2	15.3 mg/l
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 Other Aquatic Organisms 2	0.174 (0.174 - 0.311) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata
Silver (7440-22-4)	
LC50 Fish 1	0.00155 (0.00155 - 0.00293) mg/l (Exposure time: 96 h - Species: Pimephales promelas
EC50 Daphnia 1	0.00024 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC 50 Fish 2	0.0062 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-
Zinc (7440-66-6)	
LC50 Fish 1	2.16 - 3.05 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-
EC50 Daphnia 1	0.139 - 0.908 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC 50 Fish 2	0.211 - 0.269 mg/l (Exposure time: 96 h - Species: Pimephales promelas
ErC50 (algae)	0.15 mg/l

Cadmium (7440-43-9)	
LC50 Fish 1	0.003 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-
EC50 Daphnia 1	0.0244 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC 50 Fish 2	0.006 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])

12.2. Persistence and Degradability

Aluminum Alloys	
Persistence and Degradability	Not established.
Copper (7440-50-8)	
Persistence and Degradability	Not readily biodegradable.

12.3. Bioaccumulative Potential

Aluminum Alloys	
Bioaccumulative Potential	Not established.
Cobalt (7440-48-4)	
BCF Fish 1	(no bioaccumulation)

12.4. Mobility in Soil **Not available**

12.5. Other Adverse Effects

Other Information: **Avoid release to the environment.**

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Treatment Methods: **Recycle product or dispose properly.**
Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

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: DISPOSAL INFORMATION

15.1. US Federal Regulations

Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 311/312 Hazard Classes	**Fire hazard** **Reactive hazard**
SARA Section 313 - Emission Reporting	**1.0 % (dust or fume only)**
Silicon (7440-21-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	**1.0 %**
Cobalt (7440-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 311/312 Hazard Classes	**Immediate (acute) health hazard** **Delayed (chronic) health hazard**
SARA Section 313 - Emission Reporting	**0.1 %**
Manganese (7439-96-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	

SARA Section 313 - Emission Reporting	1.0 %
Nickel (7440-02-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory **Subject to reporting requirements of United States SARA Section 313**	
RQ (Reportable Quantity, Section 304 of EPA's List of Lists):	**100 lb (only applicable if particles are < 100 µm)**
SARA Section 311/312 Hazard Classes	**Immediate (acute) health hazard** **Delayed (chronic) health hazard**
SARA Section 313 - Emission Reporting	**0.1 %**
Silver (7440-22-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory **Subject to reporting requirements of United States SARA Section 313**	
RQ (Reportable Quantity, Section 304 of EPA's List of Lists):	**1000 lb < 100 um CERCLA/SARA RQ CHANGE TITLE**
SARA Section 313 - Emission Reporting	**1.0 %**
Zinc (7440-66-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory **Subject to reporting requirements of United States SARA Section 313**	
SARA Section 313 - Emission Reporting	**1.0 % (dust or fume only)**
Magnesium (7439-95-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Iron (7439-89-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	**Fire hazard**
Chromium (7440-47-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory **Subject to reporting requirements of United States SARA Section 313**	
SARA Section 313 - Emission Reporting	**1.0 %**
Cadmium (7440-43-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory **Subject to reporting requirements of United States SARA Section 313**	
SARA Section 313 - Emission Reporting	**0.1 %**

15.2. US State Regulations

Cobalt (7440-48-4)	
U.S. - California - Proposition 65 - Carcinogens List	**WARNING: This product contains chemicals known to the State of California to cause cancer.**
Nickel (7440-02-0)	
U.S. - California - Proposition 65 - Carcinogens List	**WARNING: This product contains chemicals known to the State of California to cause cancer.**

Cadmium (7440-43-9)	
U.S. - California - Proposition 65 - Carcinogens List	**WARNING: This product contains chemicals known to the State of California to cause cancer.**
U.S. - California - Proposition 65 - Developmental Toxicity	**WARNING: This product contains chemicals known to the State of California to cause birth defects.**
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	**WARNING: This product contains chemicals known to the State of California to cause (Male) reproductive harm.**

Aluminum (7429-90-5)

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

Silicon (7440-21-3)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know) List

Copper (7440-50-8)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know)- Environmental Hazard List
U.S.- Pennsylvania- RTK (Right to Know) List

Cobalt (7440-48-4)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know)- Environmental Hazard List
U.S.- Pennsylvania- RTK (Right to Know) List

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

Nickel (7440-02-0)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know)- Environmental Hazard List
U.S.- Pennsylvania- RTK (Right to Know)- Special Hazardous Substances
U.S.- Pennsylvania- RTK (Right to Know) List

Silver (7440-22-4)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know)- Environmental Hazard List
U.S.- Pennsylvania- RTK (Right to Know) List

Zinc (7440-66-6)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know)- Environmental Hazard List
U.S.- Pennsylvania- RTK (Right to Know) List

Magnesium (7439-95-4)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know) List

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

Cadmium (7440-43-9)
U.S.- Massachusetts- Right To Know List
U.S.- New Jersey- Right to Know Hazardous Substance List
U.S.- Pennsylvania- RTK (Right to Know)- Environmental Hazard List
U.S.- Pennsylvania- RTK (Right to Know)- Special Hazardous Substances
U.S.- Pennsylvania- RTK (Right to Know) List

15.3. Canadian Regulations

Aluminum Alloys	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Aluminum (7429-90-5)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL	
IDL Concentration 1 %	
WHMIS Classification	Class B Division 6- Reactive Flammable Material Class B Division 4- Flammable Solid
Silicon (7440-21-3)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Copper (7440-50-8)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Cobalt (7440-48-4)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 0.1 %	
WHMIS Classification	Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
Manganese (7439-96-5)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Nickel (7440-02-0)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 0.1 %	
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Silver (7440-22-4)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Zinc (7440-66-6)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Magnesium (7439-95-4)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 4- Flammable Solid Class B Division 6- Reactive Flammable Material

Iron (7439-89-6)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class B Division 4- Flammable Solid Class B Division 6- Reactive Flammable Material

Chromium (7440-47-3)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 0.1 %	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Cadmium (7440-43-9)	
Listed on the Canadian DSL (Domestic Substances List) Listed on the Canadian IDL (Ingredient Disclosure List)	
IDL Concentration 0.1 %	
WHMIS Classification	Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

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

Other Information: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Acute Tox. 2 (Inhalation:	Acute toxicity (inhalation: dust,mist) Category 2
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment- Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment- Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment- Chronic Hazard Category 3
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Sol. 1	Flammable solids Category 1
Muta. 2	Germ cell mutagenicity Category 2
Repr. 2	Reproductive toxicity Category 2
Resp. Sens. 1B	Respiratory sensitisation Category 1B
Self-heat. 1	Self-heating substances and mixtures Category 1
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
Water-react. 2	Substances and mixtures which in contact with water emit flammable gases
H228	Flammable solid
	May form combustible dust concentrations in air
H251	Self-heating: may catch fire
H261	In contact with water releases flammable gases
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H330	Fatal if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Party Responsible for the Preparation of This Document

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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. Therefore, it should not be construed as guaranteeing any specific property of the product.