SAFETY DATA SHEET

Aluminum Extrusions, Billets or Logs

Section 1. Identification

GHS product identifier : Aluminum Extrusions, Billets or Logs

Product code : Not available.

Other means of identification : 6XXX Series Alloys including: 6005, 6005A, 6060, 6061, 6063, 6082, 6105, 6181, 6351, 6360, 6463; Aluminum; Wrought Aluminum Products

Product type : Massive metal.
Not hazardous in solid form. If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

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

Product use : Various extruded and/or fabricated aluminum parts, products and cast billet.

Area of application : Industrial applications.

Manufacturer : **Bonnell Aluminum, Inc.**
25 Bonnell Street, Newnan, GA 30263

Website: BonnellAluminum.com
Telephone no.: (770) 254-2020

Emergency telephone number (with hours of operation) : Chemtrec (North America): 1-800-424-9300 (24 hours)

Section 2. Hazards identification

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P260 - Do not breathe dust.

Response : Not applicable.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

United States

Section 2. Hazards identification

Hazards not otherwise classified : Danger.
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.
May cause an allergic skin reaction.
Suspected of causing cancer.
May damage fertility or the unborn child.
May cause harm to breast-fed children.
May cause damage to organs through prolonged or repeated exposure.

Hazards identified when used : No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : 6XXX Series Alloys including: 6005, 6005A, 6060, 6061, 6063, 6082, 6105, 6181, 6351, 6360, 6463; Aluminum; Wrought Aluminum Products

Ingredient name	Synonyms	%	Identifiers
Aluminum, non flammable solid	-	≥80	CAS: 7429-90-5
magnesium, non flammable solid	-	≥1 - ≤5	CAS: 7439-95-4
zinc	-	≥1 - ≤5	CAS: 7440-66-6
silicon	-	≥1 - ≤5	CAS: 7440-21-3
Manganese	-	≥1 - ≤5	CAS: 7439-96-5
iron	-	≥0.5 - ≤1.5	CAS: 7439-89-6
Copper	-	≥0.5 - ≤1.5	CAS: 7440-50-8
chromium	-	≥0.1 - ≤1	CAS: 7440-47-3
lead	-	≥0.1 - ≤1	CAS: 7439-92-1
titanium	-	≥0.1 - ≤1	CAS: 7440-32-6
nickel	-	≥0.1 - ≤1	CAS: 7440-02-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Description of necessary first aid measures

Eye contact : Get medical attention if any damage to the eye is caused by the metal.

Inhalation : Not applicable.

Skin contact : Flush contaminated skin with plenty of water. Cuts should be treated promptly and covered.

Ingestion : Not applicable.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Not applicable.

Inhalation : Not applicable.

Section 4. First aid measures

Skin contact : No known significant effects or critical hazards.

Ingestion : Not applicable.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Extinguishing media

Suitable extinguishing media : Use approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone.

Unsuitable extinguishing media : Do not use water jet.
Halogen (HCFC) extinguisher.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides
Halides
hydrogen cyanide
hydrogen chloride

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : No special protection is required.

Remark : Solid.: Non-combustible. Not considered to be a product presenting a risk of explosion.
Material in powder form, capable of creating a dust explosion.
Molten material reacts violently with water and can react with aluminum, tin, zinc and their alloys to generate flammable and explosive hydrogen gas.

Section 6. Accidental release measures

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : No specific hazard.

Methods and materials for containment and cleaning up

Small spill : Restack safely. Take care with items that are sharp or heavy or hot. Aluminum does not change color or glow when hot/heated.

Large spill : Restack safely. Take care with items that are sharp or heavy or hot. Aluminum does not change color or glow when hot/heated. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Take care with items that are sharp or heavy or hot.

Advice on general occupational hygiene : Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Aluminum, non flammable solid	**ACGIH TLV (United States, 1/2025) [Aluminum, metal and insoluble compounds]** A4. TWA 8 hours: 1 mg/m³. Form: Respirable fraction. **NIOSH REL (United States, 10/2020)** TWA 10 hours: 10 mg/m³. Form: Total. TWA 10 hours: 5 mg/m³. Form: Respirable fraction. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 15 mg/m³ (as Al). Form: Total dust. TWA 8 hours: 5 mg/m³ (as Al). Form: Respirable fraction. **CAL OSHA PEL (United States, 1/2025)**

Section 8. Exposure controls/personal protection

	TWA 8 hours: 5 mg/m³. Form: powder.
magnesium, non flammable solid	None.
zinc	None.
silicon	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 10 mg/m³. Form: Total. TWA 10 hours: 5 mg/m³. Form: Respirable fraction. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 15 mg/m³. Form: Total dust. TWA 8 hours: 5 mg/m³. Form: Respirable fraction. **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 5 mg/m³. Form: respirable fraction. TWA 8 hours: 10 mg/m³. Form: total dust.
Manganese	**ACGIH TLV (United States, 1/2025) [Manganese and inorganic compounds]** A4. TWA 8 hours: 0.02 mg/m³ (as Mn). Form: Respirable fraction. TWA 8 hours: 0.1 mg/m³ (as Mn). Form: Inhalable fraction. **NIOSH REL (United States, 10/2020) [manganese compounds and fume]** TWA 10 hours: 1 mg/m³ (as Mn). Form: Fume. STEL 15 minutes: 3 mg/m³ (as Mn). Form: Fume. **OSHA PEL (United States, 5/2018)** CEIL: 5 mg/m³ (as Mn). Form: Fume. **CAL OSHA PEL (United States, 1/2025)** STEL 15 minutes: 3 mg/m³ (as Mn). TWA 8 hours: 0.2 mg/m³ (as Mn).
iron	None.
Copper	**ACGIH TLV (United States, 1/2025) [copper dusts and mists]** TWA 8 hours: 1 mg/m³ (as Cu). Form: Dust and mist. **ACGIH TLV (United States, 1/2025) [copper fume]** TWA 8 hours: 0.2 mg/m³. Form: Fume. **NIOSH REL (United States, 10/2020)** TWA 10 hours: 1 mg/m³ (as Cu). Form: Dusts and Mists. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 0.1 mg/m³. Form: Fume. TWA 8 hours: 1 mg/m³. Form: Dusts and Mists. **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.1 mg/m³ (as Cu).
chromium	**ACGIH TLV (United States, 1/2025)** TWA 8 hours: 0.5 mg/m³ (measured as Cr). Form: Inhalable fraction. **NIOSH REL (United States, 10/2020)** TWA 8 hours: 0.5 mg/m³. **OSHA PEL (United States, 5/2018) [Chromium metal and insol salts]** TWA 8 hours: 1 mg/m³ (as Cr). **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.5 mg/m³.
lead	**ACGIH TLV (United States, 1/2025) [Lead and inorganic compounds]** A3. TWA 8 hours: 0.05 mg/m³ (as Pb). **NIOSH REL (United States, 10/2020)**

United States

Section 8. Exposure controls/personal protection

	TWA 8 hours: 0.05 mg/m³. **OSHA PEL (United States, 5/2018) [Lead inorganic]** TWA 8 hours: 50 µg/m³ (as Pb). **CAL OSHA PEL (United States, 1/2025) [lead (metallic) and inorganic compounds, dust and fume]** TWA 8 hours: 0.01 mg/m³ (as Pb). Form: dust and fume.
titanium	None.
nickel	**ACGIH TLV (United States, 1/2025)** A5. TWA 8 hours: 1.5 mg/m³. Form: Inhalable fraction. **NIOSH REL (United States, 10/2020) [nickel metal and other compounds]** NIA. TWA 10 hours: 0.015 mg/m³ (as Ni). **OSHA PEL (United States, 5/2018) [Nickel, metal and insoluble compounds]** TWA 8 hours: 1 mg/m³ (as Ni). **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.5 mg/m³ (as Ni).

Biological exposure indices

Ingredient name	Exposure indices
chromium	**ACGIH BEI (United States, 1/2025)** BEI: 0.7 µg/l, total chromium [in urine]. Sampling time: end of shift at end of workweek.
lead	**ACGIH BEI (United States, 1/2025) [lead and inorganic compounds]** BEI: 200 µg/l, lead [in blood]. Sampling time: not critical.
nickel	**ACGIH BEI (United States, 1/2025) [nickel and inorganic compounds]** BEI: 30 µg/l, nickel [in urine after exposure to soluble compounds]. Sampling time: post-shift at end of workweek. BEI: 5 µg/l, nickel [in urine after exposure to elemental nickel and poorly soluble compounds]. Sampling time: post-shift at end of workweek.

Appropriate engineering controls : No special ventilation requirements.

Environmental exposure controls : Not applicable.

Individual protection measures

Hygiene measures : Wash thoroughly after handling.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Section 8. Exposure controls/personal protection

Skin protection

Hand protection : Use strong, cut-resistant gloves suitable for handling metals.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Not applicable.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid. [Various]

Color : Gray. / Silver.

Odor : Odorless.

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : 593 to 704°C (1099.4 to 1299.2°F)

Boiling point or initial boiling point and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not applicable.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not applicable.

Vapor pressure : Not applicable.

Relative vapor density : Not applicable.

Relative density : 2.5 to 2.9

Density : 2.69 to 2.74 g/cm³

Solubility(ies) : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Dynamic (room temperature): Not applicable.
Kinematic (room temperature): Not applicable.
Kinematic (40°C (104°F)): Not applicable.

Particle characteristics

Median particle size : Not available.

Other information

Physical/chemical properties comments : No additional information.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Avoid dust generation.

Incompatible materials : Molten aluminum is reactive with water. Aluminum particles are reactive or incompatible with water, humidity, strong alkalis, strong acids, halogenated acids and strong oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
silicon	**Rat - Oral - LD50** 3160 mg/kg	
Manganese	**Rat - Oral - LD50** 9 g/kg	
	Rat - Inhalation - LC50 Dusts and mists 5.14 mg/l [4 hours]	OECD [Acute Inhalation Toxicity-Fixed Dose Procedure]
iron	**Rat - Oral - LD50** 750 mg/kg	Toxic effects: Blood - Changes in serum composition (e.g., TP, bilirubin, cholesterol) Enzyme inhibition, induction, or change in blood or tissue levels - Transaminases
Copper	**Rat - Male, Female - Inhalation - LC50 Dusts and mists** >5.11 mg/l [4 hours]	OECD 436 [Acute Inhalation Toxicity - Acute Toxic Class (ATC) Method]
lead	**Rat - Male, Female - Oral - LD50** >2000 mg/kg	OECD [Acute Oral toxicity - Acute Toxic Class Method]
	Rat - Male, Female - Dermal - LD50 >2000 mg/kg	OECD [Acute Dermal Toxicity]
	Rat - Male, Female - Inhalation - LC50 Dusts and mists >5.05 mg/l [4 hours]	OECD [Acute Inhalation Toxicity]
nickel	**Rat - Oral - LD50** >2000 mg/kg	

Conclusion/Summary [Product] : Not available.

Section 11. Toxicological information

Skin corrosion/irritation

Product/ingredient name	Result
Manganese	**Rabbit - Skin - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
silicon	**Rabbit - Eyes - Mild irritant** Amount/concentration applied: 3 mg
Manganese	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary [Product] : Dust : May cause sensitization by skin contact.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Conclusion/Summary [Product] : Contains material which can cause cancer.
Dust (prolonged exposure): Can cause cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP
chromium	-	3	-
lead	-	2B	Reasonably anticipated to be a human carcinogen.
nickel	-	2B	Reasonably anticipated to be a human carcinogen.

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary [Product] : Contains material which can impair fertility.
Dust (prolonged exposure): Possible risk of impaired fertility.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
Manganese	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (brain, lungs) - Category 1
lead	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), kidneys) (inhalation) - Category 1
nickel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory tract) (inhalation) - Category 1

Aspiration hazard

Not available.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact : Not applicable.

Inhalation : Not applicable.

Skin contact : No known significant effects or critical hazards.

Ingestion : Not applicable.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Potential chronic health effects

Conclusion/Summary [Product] : Contains material that may cause target organ damage, based on animal data.
Dust : May cause damage to organs through prolonged or repeated exposure.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
silicon	3160	N/A	N/A	N/A	N/A
Manganese	9000	N/A	N/A	N/A	5.14
iron	750	N/A	N/A	N/A	N/A
lead	2500	2500	N/A	N/A	N/A
nickel	2500	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	
Aluminum, non flammable solid	**Acute - LC50 - Fresh water** Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss* - Embryo 120 µg/l [96 hours]	Effect: Mortality
	Chronic - NOEC - Fresh water Aquatic plants - Coontail - *Ceratophyllum demersum* Weight: 3.5 g 9 mg/l [3 days]	Effect: Enzymes
	Acute - LC50 - Fresh water Daphnia - Water flea - *Daphnia magna* 38 mg/l [48 hours]	Effect: Mortality
zinc	**Chronic - NOEC - Fresh water** Fish - common carp - *Cyprinus carpio* Age: 13 months; Size: 10.5 cm; Weight: 27.8 g 2.6 µg/l [4 weeks]	Effect: Accumulation
	Acute - LC50 - Marine water Fish - Mudskipper - *Periophthalmus waltoni* - Adult 12.21 µg/l [96 hours]	Effect: Mortality

Section 12. Ecological information

	Chronic - EC10 Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 6.3 µg/l [21 days]	Effect: Reproduction OECD
	Acute - EC50 - Fresh water Crustaceans - Water flea - *Ceriodaphnia dubia* - Neonate Age: <24 hours 34 µg/l [48 hours]	Effect: Intoxication US EPA
	Acute - EC50 Algae - Green algae - *Raphidocelis subcapitata* 0.005 mg/l [72 hours]	Effect: Population
	Chronic - EC10 - Fresh water Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 27.3 µg/l [72 hours]	Effect: Population OECD
Manganese	**Acute - EC50 - Fresh water** Aquatic plants - Duckweed - *Lemna minor* 31 mg/l [4 days]	Effect: Growth
	Acute - LC50 - Fresh water Fish - Fathead minnow - *Pimephales promelas* 28 mg/l [96 hours]	Effect: Mortality
	Acute - LC50 - Fresh water Daphnia - Water flea - *Daphnia magna* 29 mg/l [48 hours]	Effect: Mortality
	Chronic - NOEC - Fresh water Daphnia - *Ceriodaphnia dubia* 1.7 mg/l [8 days]	OECD [Daphnia Magna Reproduction Test]
iron	**Acute - LC50 - Marine water** Crustaceans - Common shrimp, sand shrimp - *Crangon crangon* 33 to 100 mg/l [48 hours]	Effect: Mortality
	Acute - EC50 - Fresh water Aquatic plants - Duckweed - *Lemna minor* 3700 µg/l [4 days]	Effect: Growth
	Chronic - NOEC - Marine water Algae - Dinoflagellate - *Glenodinium halli* 100 mg/l [72 hours]	Effect: Population
	Acute - LC50 - Marine water Fish - Mudskipper - *Periophthalmus waltoni* - Adult 6.48 µg/l [96 hours]	Effect: Mortality
Copper	**Acute - LC50 - Marine water** Crustaceans - Scud Order - *Amphipoda* - Adult Size: 9 mm 0.072 µg/l [48 hours]	Effect: Mortality
	Chronic - NOEC - Marine water Algae - Diatom - *Nitzschia closterium* -	Effect: Population

Section 12. Ecological information

	Exponential growth phase 2.5 µg/l [72 hours]	
	Chronic - NOEC - Fresh water Fish - Nile tilapia - *Oreochromis niloticus* - Juvenile (Fledgling, Hatchling, Weanling) Weight: 8.3 g 0.8 µg/l [6 weeks]	Effect: Biochemistry
	Acute - LC50 - Marine water Fish - Mudskipper - *Periophthalmus waltoni* - Adult 7.56 µg/l [96 hours]	Effect: Mortality
	Chronic - NOEC - Fresh water Daphnia - Water flea - *Daphnia magna* 2 µg/l [21 days]	Effect: Mortality
	Acute - IC50 - Fresh water Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 13 µg/l [72 hours]	Effect: Population
chromium	**Acute - LC50 - Fresh water** Daphnia - Water flea - *Daphnia magna* Age: <24 hours 22 µg/l [48 hours]	Effect: Mortality
	Chronic - NOEC - Marine water Algae - Dinoflagellate - *Glenodinium halli* 50 mg/l [72 hours]	Effect: Population
	Chronic - NOEC - Fresh water Fish - common carp - *Cyprinus carpio* Age: 13 months; Size: 10.5 cm; Weight: 27.8 g 0.19 µg/l [4 weeks]	Effect: Accumulation
	Acute - EC50 - Marine water Algae - Diatom Division - *Bacillariophyta* 0.2 ppm [72 hours]	Effect: Population
	Acute - LC50 - Fresh water Fish - American Eel - *Anguilla rostrata* 13.9 ppm [96 hours]	Effect: Mortality
	Chronic - NOEC - Fresh water Daphnia - Water flea - *Daphnia magna* - Neonate Age: 24 to 48 hours 5 ppb [21 days]	Effect: Growth
lead	**Acute - LC50 - Fresh water** Crustaceans - Water flea - *Ceriodaphnia reticulata* Age: <4 hours 530 µg/l [48 hours]	Effect: Mortality
	Acute - LC50 - Fresh water Fish - common carp - *Cyprinus carpio* - Juvenile (Fledgling, Hatchling, Weanling) Size: 3.5 cm 0.44 ppm [96 hours]	Effect: Mortality
	Chronic - NOEC - Fresh water	Effect: Accumulation

Section 12. Ecological information

	Fish - common carp - *Cyprinus carpio* Age: 13 months; Size: 10.5 cm; Weight: 27.8 g 0.03 µg/l [4 weeks]	
	Acute - EC50 - Fresh water Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 20.5 µg/l [72 hours]	Effect: Population OECD
	Chronic - EC10 - Fresh water Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 3.9 µg/l [72 hours]	Effect: Population OECD
nickel	**Acute - EC50 - Fresh water** Aquatic plants - Duckweed - *Lemna minor* 450 µg/l [4 days]	Effect: Growth
	Chronic - NOEC - Marine water Algae - Dinoflagellate - *Glenodinium halli* 100 mg/l [72 hours]	Effect: Population
	Chronic - NOEC - Fresh water Fish - common carp - *Cyprinus carpio* Age: 13 months; Size: 10.5 cm; Weight: 27.8 g 3.5 µg/l [4 weeks]	Effect: Accumulation
	Acute - LC50 - Fresh water Crustaceans - Water flea - *Ceriodaphnia dubia* - Juvenile (Fledgling, Hatchling, Weanling) Age: 2 to 8 hours 34.6 µg/l [48 hours]	Effect: Mortality US EPA, OECD
	Chronic - EC10 Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 6.9 µg/l [21 days]	Effect: Reproduction OECD
	Acute - LC50 - Fresh water Fish - Indian catfish - *Heteropneustes fossilis* 47.5 ng/l [96 hours]	Effect: Mortality

Conclusion/Summary [Product] : Not available.

Persistence and degradability

Conclusion/Summary [Product] : Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Section 12. Ecological information

Soil/Water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made in accordance with local and governmental regulations.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-		-	-
Transport hazard class(es)	-	-		-	-
Packing group	-	-		-	-
Environmental hazards	No.	No.	No.	No.	No.

Additional information

DOT Classification : **Reportable quantity** 2500 lbs / 1135 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Remarks Not Applicable when shipped as massive solid metal.

Special precautions for user : Not Applicable when shipped as massive solid metal.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): All components are active or exempted.

Clean Water Act (CWA) 307: zinc; Copper; chromium; lead; nickel

TSCA 12(b) - Chemical export notification

Name	One time notification		Annual notification		
	4	5	5(f)	6	7
zinc	Not listed	Not listed	Not listed	Listed	Not listed
lead	Not listed	Not listed	Not listed	Listed	Not listed

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Not applicable.

Composition/information on ingredients

Name	%	Classification
magnesium, non flammable solid	≥1 - ≤5	SUBSTANCES AND MIXTURES, WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 3
silicon	≥1 - ≤5	FLAMMABLE SOLIDS - Category 2 EYE IRRITATION - Category 2B
Manganese	≥1 - ≤5	FLAMMABLE SOLIDS - Category 2 EYE IRRITATION - Category 2B SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
iron	≥0.5 - ≤1.5	ACUTE TOXICITY (oral) - Category 4
lead	≥0.1 - ≤1	CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION - Category 1A TOXIC TO REPRODUCTION - Effects on or via lactation SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
titanium	≥0.1 - ≤1	FLAMMABLE SOLIDS - Category 1 PYROPHORIC SOLIDS - Category 1
nickel	≥0.1 - ≤1	SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

United States

Section 15. Regulatory information

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Aluminum, non flammable solid zinc Manganese Copper lead nickel	7429-90-5 7440-66-6 7439-96-5 7440-50-8 7439-92-1 7440-02-0	≥80 ≥1 - ≤5 ≥1 - ≤5 ≥0.5 - ≤1.5 ≥0.1 - ≤1 ≥0.1 - ≤1
Supplier notification	Aluminum, non flammable solid zinc Manganese Copper lead nickel	7429-90-5 7440-66-6 7439-96-5 7440-50-8 7439-92-1 7440-02-0	≥80 ≥1 - ≤5 ≥1 - ≤5 ≥0.5 - ≤1.5 ≥0.1 - ≤1 ≥0.1 - ≤1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: ALUMINUM; MAGNESIUM; ZINC; SILICON DUST; MANGANESE; COPPER

New York : The following components are listed: Zinc; Copper

New Jersey : The following components are listed: ALUMINUM; MAGNESIUM; ZINC; SILICON; MANGANESE; COPPER; LEAD; NICKEL

Pennsylvania : The following components are listed: MAGNESIUM; ZINC COMPOUNDS; SILICON; MANGANESE COMPOUNDS; COPPER FUME

California Prop. 65

⚠ **WARNING**: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Lead Nickel	Yes. -	Yes. -

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Lead (Pb)	Heavy metals - Annex 1	Listed

United States

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
Not classified.	

History

Date of issue/Date of revision : 02/27/2026

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Version : 3

Prepared by : Sphera Solutions

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
TDG = Transportation of Dangerous Goods
UN = United Nations

References : HCS (U.S.A.) - Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

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