Cast Aluminum Products, 1xxx Series Alloys

Safety Data Sheet

According to Federal Register / Vol. 89, No. 98 / Monday, May 20, 2024 / Rules and Regulations
Date of Issue: 09/29/2025 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Cast Aluminum Products, 1xxx Series Alloys

1.2 Recommended Use and Restrictions on Use

Use Of The Substance/Mixture : Various fabricated aluminum parts and products

Restrictions On Use : No additional information available

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

Company

TCI – Texarkana, Inc
300 Alumax Drive
Nash, TX 75569
T 1-903-832-8471
Email: EHS@texarkanaaluminum.com
Website: www.texarkanaaluminum.com

1.4. Emergency Telephone Number

Emergency Number : VelocityEHS
(800)255-3924 (North America)
+1 (813)248-0585 (International)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US Classification

Classification as delivered:

Not classified

Classification Intended Use (Physical alteration resulting in dust, fines, and chips):

Flammable solid, Category 1	H228
Substances and mixtures which, in contact with water, emit flammable gases, Category 2	H261
Hazardous to the aquatic environment — Acute Hazard, Category 2	H401

2.2. Label Elements

GHS-US Labeling

Classification as delivered:

Not classified

Classification Intended Use (Physical alteration resulting in dust, fumes, fines, and chips):

Hazard Pictograms (GHS-US) :

GHS02

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : H228 - Flammable solid.
H261 - In contact with water releases flammable gas.
H401 - Toxic to aquatic life.

Precautionary Statements (GHS-US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P223 - Do not allow contact with water.
P231+P232 - Handle and store contents under inert gas. Protect from moisture.
P240 - Ground/Bond container and receiving equipment.
P241 - Use explosion-proof equipment.
P273 - Avoid release to the environment.
P280 - Wear eye protection, protective gloves and clothing.
P302+P335+P334 - IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.
P370+P378 - In case of fire: Use appropriate media to extinguish.
P402+P404 - Store in a dry place. Store in a closed container.
P501 - Dispose of contents and/or container to hazardous or special waste

collection point, in accordance with local, regional, national and/or international regulations.

2.3 Hazards associated with known or reasonably anticipated uses

If this product is used in unforeseeable chemical processes and not used as intended or reasonable, the hazards listed in Section 2.3 cannot cover all chemistries. Therefore, a Process Hazard Analysis (PHA) or other hazard assessment for additional specific end uses should be performed to ensure that hazards are fully understood, and adequate safety measures are in place. See Section 10 for relevant reactivity and stability information

2.4. Other Hazards

This product is physiologically inert in its massive form. However, user-generated dust and/or fumes may pose a physiological hazard if inhaled or ingested. Avoid inhalation of metal dusts and fumes. May cause an influenza-like illness. Avoid skin and eye contact with dusts to prevent mechanical irritation. User-generated dust is easily ignited and difficult to extinguish. 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. Molten material may produce fumes that are toxic, or irritating, and may cause metal fume fever. When machined or physically altered material may produce dusts or ribbons that may be irritating or harmful. Risk of thermal burns on contact with molten product.

2.5. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	%	GHS US classification
Aluminum	Aluminium / Aluminium metal / Aluminium, metal / Aluminum metal / Aluminum, elemental / Aluminum, metal / C.I. 77000 / CI 77000 / Aluminium powder (stabilised) / Aluminium powder (stabilized) / Aluminium powder / Pigment Metal 1 / Aluminum powder / Aluminium metal, powder / Aluminum powder (pigment metal 1) / Alumnium, total	(CAS-No.) 7429-90-5	80 – 100	Flam. Sol. 1, H228 Water-react. 2, H261
Silicon	Silicon powder / Silicon powder, amorphous / SILICON / silicon	(CAS-No.) 7440-21-3	0.1 – 1	Combustible Dust
Iron	Iron, elemental / Direct reduced Iron / Iron, reduced / Elemental iron / IRON POWDER / iron	(CAS-No.) 7439-89-6	0.1 – 1	Combustible Dust
Copper	C.I. 77400 / C.I. Pigment Metal 2 / Copper, elemental / CI 77400 / Copper metal / Copper, metallic / Pigment Metal 2 / Granulated copper / copper / Copper, granulated	(CAS-No.) 7440-50-8	< 0.2	Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Combustible Dust
Manganese	Manganese, elemental / Manganese metal / manganese / Manganese (Mn)	(CAS-No.) 7439-96-5	< 0.1	Flam. Sol. 2, H228 STOT RE 1, H372 Aquatic Acute 2, H401 Aquatic Chronic 2, H411 Combustible Dust

Full text of H-phrases: see section 16

This mixture has a variable composition.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

First-aid Measures General: The health effects listed below are not likely to occur unless dust or fumes are generated by processing. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Removal of solidified material from skin, eyes, or mouth requires medical assistance.

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

First-aid Measures After Skin Contact: For particulates, dust, or fumes from processing: Immediately remove contaminated clothing. Brush off loose particles from skin. Get immediate medical advice/attention. In molten form: Cool skin rapidly with cold water after contact with molten product. Immerse in cool water/wrap in wet bandages. Seek medical attention for thermal burns. Removal of solidified molten material from skin requires medical assistance.

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

First-aid Measures After Ingestion: For particulates and dust: 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

Symptoms/Injuries: As shipped this product is not expected to be hazardous to human health. If physically altered resulting in dust, fumes, fines, and chips the following health hazards may apply: Not expected to present a significant hazard under anticipated conditions of normal use. In molten form: Risk of thermal burns on contact with molten product. Prolonged contact with large amounts of dust may cause mechanical irritation. This product contains lead and nickel. Exposure to small chips, fine turnings, and dust from processing may cause cancer.

Symptoms/Injuries After Inhalation: For particulates, dust, or fumes from processing: 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. During welding, the most significant route of exposure is by the inhalation (breathing) of welding fumes. If welding fumes are inhaled, they can cause a condition commonly known as metal fume fever with symptoms which resemble influenza.

Symptoms/Injuries After Skin Contact: For particulates and dust: Skin contact with large amounts of dust may cause mechanical irritation. Contact with fumes or metal powder will irritate skin. In molten form: Contact with hot, molten metal will cause thermal burns.

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

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects. Ingestion of the molten product may cause severe thermal burns.

Chronic Symptoms: In massive form, no chronic 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. Silicon: Can cause chronic bronchitis and narrowing of the airways. 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. 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. Overexposure to metal fumes may result metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude), disturbances in smell and/or taste, and possible discoloration of skin, hair and mucous membranes; discoloration may become permanent.

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

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

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: For metal fires, dry sand, graphite, or dry table salt may be used. Dust, fines, or molten metal: Use Class D extinguishing agents. As shipped: Use extinguishing media appropriate for surrounding fire.

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

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: In massive form: Not flammable. The following applies to the product if it is cut, sanded or altered in such a way that excessive and/or significant particulates and/or dusts may be generated: Flammable solid. If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air. 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. Reacts readily with water to produce flammable gases which may ignite and cause a fire. Molten material may react violently with water forming explosive or flammable reactions.

Explosion Hazard: Product itself is not explosive but if dust is generated, dust clouds suspended in air can be explosive. Reacts readily with water to emit flammable gases which could ignite and possibly cause an explosion. Molten material may react violently with water forming explosive or flammable reactions.

Reactivity: As shipped: Stable under normal storage conditions. Dust and other forms of product formed from processing might react with water producing a flammable/explosive environment, especially in confined spaces. Molten material will react violently with water. Reacts readily with water liberating highly flammable gases. Reacts violently with strong oxidizers. Increased risk of fire or explosion. In molten form may react violently with water.

5.3. Advice for Firefighters

Precautionary Measures Fire: Under fire conditions, hazardous fumes will be present. Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not breathe fumes from fires or vapours from decomposition. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Firefighters must use full bunker gear including NIOSH-approved positive-pressure self-contained breathing apparatus to protect against potential hazardous combustion and decomposition products. Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Metal oxides.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Eliminate every possible source of ignition. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Do not breathe dust. Do not breathe fumes from molten product. Avoid all contact with skin, eyes, or clothing. Use only non-sparking tools. Where possible allow molten material to solidify naturally.

6.1.1. For Non-Emergency Personnel

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

Emergency Procedures: Avoid creating or spreading dust. Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Personnel

Protective Equipment: Wear suitable protective clothing, gloves and eye/face protection. Equip cleanup crew with proper protection.

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

6.2. Environmental Precautions

Notify authorities if liquid enters sewers or public waters. Prevent entry to sewers and public waters. Avoid release to the environment. Avoid release of dust/fines to waterways to avoid potential bioaccumulation.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Remove ignition sources. Use only non-sparking tools. Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. If metal is in molten form allow to cool and collect as a solid. If metal is in solid form collect for re-melting purposes. As an immediate precautionary measure, isolate spill or leak area in all directions. Recycle or dispose of in compliance with current legislation. Where possible allow molten material to solidify naturally.

Methods for Cleaning Up: For dust spills: Clean up spills immediately and dispose of waste safely. Use only non-sparking tools. Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal. Recover the product by vacuuming, shoveling or sweeping. Contact competent authorities after a spill. In molten form: Cool molten material to limit spreading. Allow liquid material to solidify before cleaning up.

6.4. Reference to Other Sections

See Section 8 for Exposure Controls and Personal Protection and Section 13 for Disposal Considerations. See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

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

Precautions for Safe Handling: Do not breathe dust or fumes. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing dust. Protect from moisture. Handle under inert gas. Keep away from heat, sparks, open flames, hot surfaces. – No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Do not breathe vapors from molten product.

Hygiene Measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment.

Storage Conditions: Store in original container. Store in a well-ventilated place. Keep container tightly closed. Store in a cool, dry place. Keep away from moisture, extremely high or low temperatures, ignition sources, and incomaptible materials. Keep away from heat and flame. Keep in fireproof place.

Incompatible Materials: For particulates and dust: Strong acids, strong bases, strong oxidizers. Water, humidity. Mineral acids. Corrosive substances in contact with metals may produce flammable hydrogen gas. When molten: water.

7.3. Specific End Use(s)

Various fabricated aluminum parts and products

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), or OSHA (PEL).

Aluminum (7429-90-5)		
USA ACGIH	ACGIH® TLV® TWA	1 mg/m³ (respirable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL TWA	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA OSHA	OSHA PEL TWA	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Silicon (7440-21-3)		
USA NIOSH	NIOSH REL TWA	10 mg/m³ (total dust) 5 mg/m³ (respirable dust)
USA OSHA	OSHA PEL TWA	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

Copper (7440-50-8)		
USA ACGIH	ACGIH® TLV® TWA	0.2 mg/m³ (fume)
USA NIOSH	NIOSH REL TWA	1 mg/m³ (dust and mist) 0.1 mg/m³ (fume)
USA IDLH	IDLH	100 mg/m³ (dust, fume and mist)
USA OSHA	OSHA PEL TWA	0.1 mg/m³ (fume) 1 mg/m³ (dust and mist)

Manganese (7439-96-5)		
USA ACGIH	ACGIH® TLV® TWA	0.02 mg/m³ (respirable particulate matter) 0.1 mg/m³ (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL TWA	1 mg/m³ (fume)

USA NIOSH	NIOSH REL STEL	3 mg/m³
USA IDLH	IDLH	500 mg/m³
USA OSHA	OSHA PEL C	5 mg/m³ (fume)

8.2. Exposure Controls

Appropriate Engineering Controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid dust production. Avoid creating or spreading dust. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e, there is no leakage from the equipment). Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Proper grounding procedures to avoid static electricity should be followed. Proper grounding procedures to avoid static electricity should be followed.

Personal Protective Equipment : Safety glasses. Insufficient ventilation: wear respiratory protection. Gloves. Protective clothing. Protective goggles.

Materials for Protective Clothing : With molten material wear thermally protective clothing. Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing. Thermal protection required when working with hot material.

Hand Protection : Wear chemically resistant protective gloves. If material is hot, wear thermally resistant protective gloves. Wear protective gloves. When needed, wear protective gloves to protect against thermal and/or mechanical hazards.

Eye and Face Protection : Chemical goggles or face shield.

Skin and Body Protection : Wear suitable protective clothing.

Respiratory Protection : Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits. If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Thermal Hazard Protection : If material is hot, wear thermally resistant protective gloves. When working with hot material, use suitable thermally protective clothing.

Environmental Exposure Controls : Do not allow the product to be released into the environment.

Consumer Exposure Controls : Do not eat, drink or smoke during use.

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State : Solid

Color : Metallic.

Odor : Odorless

pH : No data available

Melting Point : No data available

Freezing Point : No data available

Boiling Point : No data available

Flash Point : Not applicable

Auto-ignition Temperature : No data available

Decomposition Temperature : No data available

Flammability (solid, gas) : Flammable solid

Vapor Pressure : No data available

Relative Vapor Density at 20°C : No data available

Relative Density : No data available

Density : 170 lb/ft3

Solubility : Water: Insoluble

Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity, Kinematic	:	No data available
Particle Size	:	No data available
Particle Size Distribution	:	No data available
Particle Shape	:	No data available
Particle Aspect Ratio	:	No data available
Particle Aggregation State	:	No data available
Particle Agglomeration State	:	No data available
Particle Specific Surface Area	:	No data available
Particle Dustiness	:	No data available

9.2. Other Information

No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

As shipped: Stable under normal storage conditions. Dust and other forms of product formed from processing might react with water producing a flammable/explosive environment, especially in confined spaces. Molten material will react violently with water. Reacts readily with water liberating highly flammable gases. Reacts violently with strong oxidizers. Increased risk of fire or explosion. In molten form may react violently with water.

10.2. Chemical Stability

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

10.3. Possibility of Hazardous Reactions, Including those Associated with Foreseeable Emergencies

In contact with water releases flammable gas.

10.4. Conditions to Avoid

Moisture. Water. Avoid creating or spreading dust. Keep away from moisture, water, ignition sources, direct sunlight, extremely high or low temperatures, incompatible materials. Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources. 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

For particulates and dust: Strong acids, strong bases, strong oxidizers. Water, humidity. Mineral acids. Corrosive substances in contact with metals may produce flammable hydrogen gas. When molten: water.

10.6. Hazardous Decomposition Products

None expected under normal conditions of use. Thermal decomposition may produce: Metal oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Likely Routes of Exposure: Dermal, Ingestion, Inhalation, Eye contact

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Not classified.

Aluminum (7429-90-5)	
LD50 Oral Rat	> 15900 mg/kg
LC50 Inhalation Rat	> 0.888 mg/l/4h (no deaths)
Silicon (7440-21-3)	
LD50 Oral Rat	3160 mg/kg
Copper (7440-50-8)	
LC50 Inhalation Rat	> 5.11 mg/l/4h
Manganese (7439-96-5)	
LD50 Oral Rat	> 2000 mg/kg
LC50 Inhalation Rat	> 5.14 mg/l/4h
LC50 Inhalation Rat	> 5.14 mg/l/4h
Iron (7439-89-6)	
LD50 Oral Rat	98.6 g/kg

Skin Corrosion/Irritation: Not classified.

Serious Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitization: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive Toxicity: Not classified.

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

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

Manganese (7439-96-5)	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	≈ 0.00375 mg/l/6h/day [REACH_Dossier; two studies showing altered locomotor activity in rats following sub-chronic exposure to manganese]

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: For particulates, dust, or fumes from processing: 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. During welding, the most significant route of exposure is by the inhalation (breathing) of welding fumes. If welding fumes are inhaled, they can cause a condition commonly known as metal fume fever with symptoms which resemble influenza.

Symptoms/Injuries After Skin Contact: For particulates and dust: Skin contact with large amounts of dust may cause mechanical irritation. Contact with fumes or metal powder will irritate skin. In molten form: Contact with hot, molten metal will cause thermal burns.

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

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects. Ingestion of the molten product may cause severe thermal burns.

Chronic Symptoms: In massive form, no chronic 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. Silicon: Can cause chronic bronchitis and narrowing of the airways. 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. 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. Overexposure to metal fumes may result metal fume fever (chills, muscle aches, nausea, fever, dry throat, cough, weakness, lassitude), disturbances in smell and/or taste, and possible discoloration of skin, hair and mucous membranes; discoloration may become permanent.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Toxic to aquatic life.

Copper (7440-50-8)	
LC50 Fish 1	0.0068 – 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas Source: EPA)
EC50 - Crustacea [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 subcapitata [static])
LC50 Fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: EPA)
EC50 Other Aquatic Organisms 2	0.031 (0.031 – 0.054) mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata [static])

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

12.2. Persistence and Degradability

Cast Aluminum Products, 1xxx Series Alloys	
Persistence and Degradability	Not established. Inorganic product which cannot be eliminated from water by biological purification processes.

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

12.3. Bioaccumulative Potential

Cast Aluminum Products, 1xxx Series Alloys	
Bioaccumulative Potential	Bioaccumulation of metals cannot be excluded. Not established.

12.4. Mobility in Soil

Cast Aluminum Products, 1xxx Series Alloys	
Ecology - Soil	Adsorption to solid soil phase is not expected.

12.5. Other Adverse Effects

Other Adverse Effects : None known.

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste Treatment Methods

Waste Treatment Methods: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations. Material should be recycled if possible.

Sewage Disposal Recommendations: Do not dispose of waste into sewer. Do not empty into drains.

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

Additional Information: Recycle the material as far as possible. Handle empty containers with care because residual product is flammable. Recover or recycle if possible.

Ecology - Waste Materials: Avoid unnecessary release into the environment. Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

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

14.1. In Accordance with DOT

Not regulated for transport

14.2. In Accordance with IMDG

Not regulated for transport

14.3. In Accordance with IATA

Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Cast Aluminum Products, 1xxx Series Alloys	
SARA Section 311/312 Hazard Classes	Physical hazard - In contact with water emits flammable gas Physical hazard - Flammable (gases, aerosols, liquids, or solids)

Aluminum (7429-90-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	1 % (dust or fume only)

Silicon (7440-21-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Copper (7440-50-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %

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

Iron (7439-89-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

15.2. US State Regulations

Aluminum (7429-90-5)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

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

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

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

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

Date of Preparation or Latest Revision : 09/29/2025

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

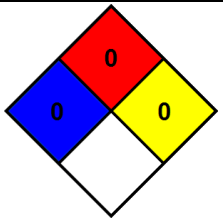
GHS Full Text Phrases:

H228	Flammable solid
H261	In contact with water releases flammable gas
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H411	Toxic to aquatic life with long lasting effects

NFPA Health Hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA Fire Hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA Reactivity Hazard : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health : 0 Minimal Hazard

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

Glossary of Data Source Abbreviations

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

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

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

SDS US (GHS HazCom)