

# Magnesium Alloys

## Safety Data Sheet

According To The Hazardous Products Regulation (February 11, 2015).

Date of Issue: 08/15/2023

Version: 1.0

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** Magnesium Alloys

**Synonyms:** Mg

#### 1.2. Intended Use of the Product

**Use Of The Substance/Mixture:** No use is specified.

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

Distributor

ThyssenKrupp Materials NA, Inc.

22355 W. Eleven Mile Road

Southfield, Michigan 48034

TEL: 248-233-5681

#### 1.4. Emergency Telephone Number

**Emergency Number** : 248-233-5681

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

**GHS-CA Classification**

Not classified

#### 2.2. Label Elements

**GHS-CA Labeling**

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

#### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. The materials present in this product in their powdered forms present aquatic toxicity to the environment, pyrophoricity, flammability, self-heating capabilities, 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.

#### 2.4. Unknown Acute Toxicity (GHS-CA)

No additional information available

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Magnesium	Magnesium powder / Magnesium powder (pyrophoric) / MAGNESIUM POWDER	(CAS-No.) 7439-95-4	80 – 99.7	Flam. Sol. 1, H228 Self-heat. 1, H251 Water-react. 2, H261 Comb. Dust
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	(CAS-No.) 7429-90-5	0.01 – 9	Flam. Sol. 1, H228 Water-react. 2, H261 Comb. Dust
Zinc oxide (ZnO)	Zinc oxide / C.I. 77947 / C.I. Pigment White 4 / Zinc White / CI 77947 / Pigment White 4	(CAS-No.) 1314-13-2	1 – 3	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Manganese	Manganese, elemental / Manganese metal / manganese	(CAS-No.) 7439-96-5	0.01 – 1	Flam. Sol. 2, H228 STOT RE 1, H372 Aquatic Acute 2, H401 Aquatic Chronic 2, H411 Comb. Dust

Full text of H-statements: see section 16

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

### SECTION 4: FIRST AID MEASURES

#### 4.1. Description of First-aid Measures

**General:** Never give anything by mouth to an unconscious person. If medical advice is needed, have product container or label at hand. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

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

**Eye Contact:** *Contact with solid product or product dusts:* 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.

**Ingestion:** Rinse mouth. Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

#### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

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

**Inhalation:** During processing, the most significant route of exposure is by the inhalation (breathing) of fumes. If fumes are inhaled, they can cause a condition commonly known as metal fume fever with symptoms which resemble influenza; Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur.

**Skin Contact:** Direct contact may cause irritation by mechanical abrasion. Contact with hot, molten metal will cause thermal burns.

**Eye Contact:** During metal processing. Dusts caused from milling and physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes. Mechanical damage via flying particles and chipped slag is possible.

**Ingestion:** Ingestion may cause adverse effects.

**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. Manganese : Chronic exposure can cause inflammation of the lung tissue, scarring the lungs (pulmonary fibrosis). Zinc: Prolonged exposure to high concentrations of zinc fumes may cause "zinc shakes", an involuntary twitching of the muscles. Otherwise, zinc is non-toxic.

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

If medical advice is needed, have product container or label at hand. If you feel unwell, seek medical advice (show the label where possible). If exposed or concerned, get medical advice and attention.

### SECTION 5: FIRE-FIGHTING MEASURES

#### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use Class D extinguishing agents on dusts, fines or molten metal. Use coarse water spray on chips and turnings.

**Unsuitable Extinguishing Media:** Do not use water when molten material is involved, as it may react violently or explosively on contact with water. Use of Halons may result in the product of toxic gases.

#### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable but may burn at high temperatures. 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.

**Explosion Hazard:** Product itself is not explosive but if dust is generated, dust clouds suspended in air can be explosive.

**Reactivity:** Stable at ambient temperature and under normal conditions of use.

#### 5.3. Advice for Firefighters

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

**Firefighting Instructions:** Do not breathe fumes from fires or vapours from decomposition.

**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.

**Hazardous Combustion Products:** Metallic oxides.

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According To The Hazardous Products Regulation (February 11, 2015).

**Other Information:** No additional information available.

### 5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Where possible allow molten material to solidify naturally. Avoid breathing dust, fumes.

#### 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.

#### 6.1.2. For Emergency Personnel

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

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Contain and collect as any solid. Avoid generation of dust during clean-up of spills. 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. Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. *In molten form:* Cool molten material to limit spreading. *For dust spills:* Clean up immediately by sweeping or vacuum. Use explosion proof vacuum during cleanup, with appropriate filter. Contact competent authorities after a large spill.

### 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 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. Product is a formed solid, however contains substances that are combustible dusts. If this product is further processed by excessive cutting, grinding or processing creating significant levels of dust and the dust is allowed to accumulate, dispersed in sufficient quantities in air, and in the presence of an ignition source, may create a dust explosion hazard.

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

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

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations.

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

**Incompatible Materials:** Corrosive substances in contact with metals may produce flammable hydrogen gas. Strong acids, strong bases, strong oxidizers. When molten: water.

### 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), or Canadian provincial governments.

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<b>Aluminum (7429-90-5)</b>		
<b>USA ACGIH</b>	ACGIH OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	Not Classifiable as a Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (TWA) [1]	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
<b>USA NIOSH</b>	NIOSH REL (TWA)	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
<b>Alberta</b>	OEL TWA	10 mg/m <sup>3</sup> (dust)
<b>British Columbia</b>	OEL TWA	1 mg/m <sup>3</sup> (respirable)
<b>Manitoba</b>	OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>New Brunswick</b>	OEL TWA	10 mg/m <sup>3</sup> (metal dust)
<b>Newfoundland &amp; Labrador</b>	OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nova Scotia</b>	OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nunavut</b>	OEL STEL	20 mg/m <sup>3</sup> (metal-dust)
<b>Nunavut</b>	OEL TWA	10 mg/m <sup>3</sup> (metal-dust)
<b>Northwest Territories</b>	OEL STEL	20 mg/m <sup>3</sup> (metal-dust)
<b>Northwest Territories</b>	OEL TWA	10 mg/m <sup>3</sup> (metal-dust)
<b>Ontario</b>	OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>Prince Edward Island</b>	OEL TWA	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>Québec</b>	VEMP (OEL TWA)	10 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL	20 mg/m <sup>3</sup> (dust)
<b>Saskatchewan</b>	OEL TWA	10 mg/m <sup>3</sup> (dust)
<b>Zinc oxide (ZnO) (1314-13-2)</b>		
<b>USA ACGIH</b>	ACGIH OEL TWA	2 mg/m <sup>3</sup> (respirable particulate matter)
<b>USA ACGIH</b>	ACGIH OEL STEL	10 mg/m <sup>3</sup> (respirable particulate matter)
<b>USA OSHA</b>	OSHA PEL (TWA) [1]	5 mg/m <sup>3</sup> (fume) 15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
<b>USA NIOSH</b>	NIOSH REL (TWA)	5 mg/m <sup>3</sup> (dust and fume)
<b>USA NIOSH</b>	NIOSH REL (STEL)	10 mg/m <sup>3</sup> (fume)
<b>USA NIOSH</b>	NIOSH REL (Ceiling)	15 mg/m <sup>3</sup> (dust)
<b>USA IDLH</b>	IDLH	500 mg/m <sup>3</sup>
<b>Alberta</b>	OEL STEL	10 mg/m <sup>3</sup> (respirable)
<b>Alberta</b>	OEL TWA	2 mg/m <sup>3</sup> (respirable)
<b>British Columbia</b>	OEL STEL	10 mg/m <sup>3</sup> (respirable)
<b>British Columbia</b>	OEL TWA	2 mg/m <sup>3</sup> (respirable)
<b>Manitoba</b>	OEL STEL	10 mg/m <sup>3</sup> (respirable particulate matter)
<b>Manitoba</b>	OEL TWA	2 mg/m <sup>3</sup> (respirable particulate matter)
<b>New Brunswick</b>	OEL STEL	10 mg/m <sup>3</sup> (fume)
<b>New Brunswick</b>	OEL TWA	10 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica, dust) 5 mg/m <sup>3</sup> (fume)
<b>Newfoundland &amp; Labrador</b>	OEL STEL	10 mg/m <sup>3</sup> (respirable particulate matter)
<b>Newfoundland &amp; Labrador</b>	OEL TWA	2 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nova Scotia</b>	OEL STEL	10 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nova Scotia</b>	OEL TWA	2 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nunavut</b>	OEL STEL	10 mg/m <sup>3</sup> (dust and fume; respirable fraction)
<b>Nunavut</b>	OEL TWA	2 mg/m <sup>3</sup> (dust and fume; respirable fraction)
<b>Northwest Territories</b>	OEL STEL	10 mg/m <sup>3</sup> (dust and fume; respirable fraction)
<b>Northwest Territories</b>	OEL TWA	2 mg/m <sup>3</sup> (dust and fume; respirable fraction)
<b>Ontario</b>	OEL STEL	10 mg/m <sup>3</sup> (respirable particulate matter)
<b>Ontario</b>	OEL TWA	2 mg/m <sup>3</sup> (respirable particulate matter)

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Prince Edward Island	OEL STEL	10 mg/m <sup>3</sup> (respirable particulate matter)
Prince Edward Island	OEL TWA	2 mg/m <sup>3</sup> (respirable particulate matter)
Québec	VECD (OEL STEL)	10 mg/m <sup>3</sup> (respirable dust)
Québec	VEMP (OEL TWA)	2 mg/m <sup>3</sup> (respirable dust)
Saskatchewan	OEL STEL	10 mg/m <sup>3</sup> (dust and fume, respirable fraction)
Saskatchewan	OEL TWA	2 mg/m <sup>3</sup> (dust and fume, respirable fraction)
Yukon	OEL STEL	10 mg/m <sup>3</sup> (fume)
Yukon	OEL TWA	5 mg/m <sup>3</sup> (fume) 30 mppcf (dust) 10 mg/m <sup>3</sup> (dust)

<b>Manganese (7439-96-5)</b>		
USA ACGIH	ACGIH OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	Not Classifiable as a Human Carcinogen
USA OSHA	OSHA PEL (Ceiling)	5 mg/m <sup>3</sup> (fume)
USA NIOSH	NIOSH REL (TWA)	1 mg/m <sup>3</sup> (fume)
USA NIOSH	NIOSH REL (STEL)	3 mg/m <sup>3</sup>
USA IDLH	IDLH	500 mg/m <sup>3</sup>
Alberta	OEL TWA	0.2 mg/m <sup>3</sup>
British Columbia	OEL TWA	0.2 mg/m <sup>3</sup> (total) 0.02 mg/m <sup>3</sup> (respirable)
Manitoba	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
New Brunswick	OEL TWA	0.2 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
Nova Scotia	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
Nunavut	OEL STEL	0.6 mg/m <sup>3</sup>
Nunavut	OEL TWA	0.2 mg/m <sup>3</sup>
Northwest Territories	OEL STEL	0.6 mg/m <sup>3</sup>
Northwest Territories	OEL TWA	0.2 mg/m <sup>3</sup>
Ontario	OEL TWA	0.2 mg/m <sup>3</sup>
Prince Edward Island	OEL TWA	0.02 mg/m <sup>3</sup> (respirable particulate matter) 0.1 mg/m <sup>3</sup> (inhalable particulate matter)
Québec	VEMP (OEL TWA)	0.2 mg/m <sup>3</sup> (total dust and fume)
Saskatchewan	OEL STEL	0.6 mg/m <sup>3</sup>
Saskatchewan	OEL TWA	0.2 mg/m <sup>3</sup>
Yukon	OEL C	5 mg/m <sup>3</sup>

## 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. Ensure adequate ventilation, especially in confined areas. 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). Ensure all national/local regulations are observed.

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



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

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

**Eye and Face Protection:** Chemical goggles or face shield.

**Skin and Body Protection:** Wear suitable protective clothing.

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

**Thermal Hazard Protection:** If material is hot, wear thermally resistant protective gloves.

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

**Consumer Exposure Controls:** Not applicable

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

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Metallic
Odor	: Odorless
Odor Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: 626.67 °C (1160.01 °F)
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)	: No data available
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapor Pressure	: No data available
Relative Vapor Density at 20°C	: No data available
Relative Density	: No data available
Specific Gravity	: 1.77
Solubility	: Insoluble in water.
Partition Coefficient: N-Octanol/Water	: No data available
Viscosity	: No data available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity:

Stable at ambient temperature and under normal conditions of use.

### 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:

Incompatible materials. Direct sunlight, extremely high or low temperatures, and incompatible materials.

### 10.5. Incompatible Materials:

Corrosive substances in contact with metals may produce flammable hydrogen gas. Strong acids, strong bases, strong oxidizers. When molten: water.

### 10.6. Hazardous Decomposition Products:

None expected under normal conditions of use.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects - Product

**Likely routes of exposure:** Dermal. Eye contact. Inhalation. Ingestion.

**Acute Toxicity (Oral):** Not classified

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**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Not classified

**LD50 and LC50 Data:**

No additional information available

**Skin Corrosion/Irritation:** Not classified

**Eye Damage/Irritation:** Not classified

**Respiratory or Skin Sensitization:** Not classified

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** Not classified

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

**Reproductive Toxicity:** Not classified

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

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** During processing, the most significant route of exposure is by the inhalation (breathing) of fumes. If fumes are inhaled, they can cause a condition commonly known as metal fume fever with symptoms which resemble influenza; Symptoms may be delayed 4-12 hours and begin with a sudden onset of thirst, and a sweet, metallic or foul taste in the mouth. Other symptoms may include upper respiratory tract irritation accompanied by coughing and a dryness of the mucous membranes, lassitude and a generalized feeling of malaise. Fever, chills, muscular pain, mild to severe headache, nausea, occasional vomiting, exaggerated mental activity, profuse sweating, excessive urination, diarrhea and prostration may also occur.

**Symptoms/Injuries After Skin Contact:** Direct contact may cause irritation by mechanical abrasion. Contact with hot, molten metal will cause thermal burns.

**Symptoms/Injuries After Eye Contact:** During metal processing. Dusts caused from milling and physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes. Mechanical damage via flying particles and chipped slag is possible.

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

**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, Manganese: Chronic exposure can cause inflammation of the lung tissue, scarring the lungs (pulmonary fibrosis), Zinc: Prolonged exposure to high concentrations of zinc fumes may cause "zinc shakes", an involuntary twitching of the muscles. Otherwise, zinc is non-toxic.

## 11.2. Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

Aluminum (7429-90-5)	
LD50 Oral Rat	> 15900 mg/kg
Zinc oxide (ZnO) (1314-13-2)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg (no deaths)
LC50 Inhalation Rat	> 5700 mg/m <sup>3</sup> (Exposure time: 4 h)
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

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General:** Not classified.

Zinc oxide (ZnO) (1314-13-2)	
LC50 Fish 1	1.793 mg/l (Exposure time: 96 h - Species: Zebrafish)
EC50 - Crustacea [1]	0.154 mg/l (Desmodesmus subspicatus 48 h)
ErC50 algae	3.35 mg/l (Desmodesmus subspicatus 72 h)
NOEC chronic fish	0.026 mg/l (Jordanella floridae)
NOEC chronic crustacea	0.04 mg/l (Daphnia magna 21 d semi-static reproduction)

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

## 12.2. Persistence and Degradability

<b>Magnesium Alloys</b>	
<b>Persistence and Degradability</b>	Inorganic product which cannot be eliminated from water by biological purification processes.

## 12.3. Bioaccumulative Potential

<b>Magnesium Alloys</b>	
<b>Bioaccumulative Potential</b>	Bioaccumulation of metals cannot be excluded.

## 12.4. Mobility in Soil

<b>Magnesium Alloys</b>	
<b>Ecology - Soil</b>	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:** Can be landfilled or incinerated, when in compliance with local regulations.

**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, territorial, provincial, and international regulations.

**Additional Information:** Recycle the material as far as possible.

**Ecology - Waste Materials:** Avoid release to the environment.

## SECTION 14: TRANSPORT INFORMATION

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

### 14.1. In Accordance with DOT

Not regulated for transport

### 14.2. In Accordance with IMDG

Not regulated for transport

### 14.3. In Accordance with IATA

Not regulated for transport

### 14.4. In Accordance with TDG

Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1. Canadian Regulations

<b>Magnesium (7439-95-4)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Aluminum (7429-90-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Zinc oxide (ZnO) (1314-13-2)</b>	
Listed on the Canadian DSL (Domestic Substances List)	
<b>Manganese (7439-96-5)</b>	
Listed on the Canadian DSL (Domestic Substances List)	

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

**Date of Preparation or Latest Revision** : 08/15/2023

**Other Information** : This document has been prepared in accordance with the SDS requirements of Canada's Hazardous Products Regulations (HPR) SOR/2015-17.



# Magnesium Alloys

## Safety Data Sheet

According To The Hazardous Products Regulation (February 11, 2015).

### GHS Full Text Phrases:

H228	Flammable solid
H251	Self-heating; may catch fire
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

*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.*

CA GHS SDS