

# SAFETY DATA SHEET

Pretreated and/or Painted Aluminum Extrusions (AAMA 2604, 2605)

## Section 1. Identification

**Product identifier** : Pretreated and/or Painted Aluminum Extrusions (AAMA 2604, 2605)  
**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.  
**Area of application** : Consumer applications, Industrial applications.

**Manufacturer** : **Bonnell Aluminum, Inc.**  
54 Bonnell Lane, Carthage, TN 37030  
  
Website: BonnellAluminum.com  
Telephone no.:615-683-8291

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

## Section 2. Hazard 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.

**Classification of the substance or mixture** : H334 RESPIRATORY SENSITIZATION - Category 1  
H317 SKIN SENSITIZATION - Category 1A  
H350 CARCINOGENICITY - Category 1A  
H360 TOXIC TO REPRODUCTION - Category 1A  
H362 TOXIC TO REPRODUCTION - Effects on or via lactation  
H372 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger

## Section 2. Hazard identification

**Hazard statements** : H317 - May cause an allergic skin reaction.  
 H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H350 - May cause cancer.  
 H360 - May damage fertility or the unborn child.  
 H362 - May cause harm to breast-fed children.  
 H372 - Causes damage to organs through prolonged or repeated exposure. (blood system, brain, central nervous system (CNS), kidneys, lungs)

### Precautionary statements

**General** : P102 - Keep out of reach of children.  
 P101 - If medical advice is needed, have product container or label at hand.

**Prevention** : P201 - Obtain special instructions before use.  
 P202 - Do not handle until all safety precautions have been read and understood.  
 P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.  
 P284 - Wear respiratory protection.  
 P260 - Do not breathe dust.  
 P263 - Avoid contact during pregnancy and while nursing.  
 P270 - Do not eat, drink or smoke when using this product.  
 P264 - Wash thoroughly after handling.

**Response** : P308 + P313 - IF exposed or concerned: Get medical advice or attention.  
 P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
 P302 + P352 - IF ON SKIN: Wash with plenty of water.  
 P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.  
 P362 + P364 - Take off contaminated clothing and wash it before reuse.

**Storage** : P405 - Store locked up.

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

**Other hazards which do not result in classification** : None known.

## 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	Other names	% (w/w)	Identifiers
silicon	-	≤3	CAS: 7440-21-3
Manganese	-	≤3	CAS: 7439-96-5
lead	-	≤1	CAS: 7439-92-1
Cobalt aluminate blue spinel	-	≤0.5	CAS: 1345-16-0
Cobalt titanite green spinel	-	≤0.5	CAS: 68186-85-6
Cobalt chromite blue green spinel	-	≤0.5	CAS: 68187-11-1
antimony nickel titanium oxide yellow	-	≤0.5	CAS: 8007-18-9
nickel	-	≤0.3	CAS: 7440-02-0
strontium chromate	-	≤0.3	CAS: 7789-06-2
cadmium sulfoselenide red	-	≤0.2	CAS: 58339-34-7

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

## Section 3. Composition/information on ingredients

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.
- Inhalation** : Not applicable.
- Skin contact** : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. 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.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Not applicable.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:  
wheezing and breathing difficulties  
asthma  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### 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.

## Section 4. First-aid measures

- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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** : Wear MSHA/NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

**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".

## Section 6. Accidental release measures

**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. Aluminum does not change color or glow when hot/heated.

**Advice on general occupational hygiene** : Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities** : Storage temperature: room temperature. 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
silicon	<p><b>CA Saskatchewan Provincial (Canada, 4/2021)</b>                      STEL 15 minutes: 20 mg/m<sup>3</sup>.                      TWA 8 hours: 10 mg/m<sup>3</sup>.</p> <p><b>CA British Columbia Provincial (Canada, 6/2025) [particles (insoluble or poorly soluble) not otherwise classified]</b> Notes:                      The 8-hour TWA listed in the Table is for the total dust. The substance also has an 8-hour TWA of 3 mg/m<sup>3</sup> for the respirable fraction.                      TWA 8 hours: 10 mg/m<sup>3</sup>. Form: total dust.                      TWA 8 hours: 3 mg/m<sup>3</sup>. Form: respirable fraction.</p> <p><b>CA Quebec Provincial (Canada, 2/2024)</b>                      TWAEV 8 hours: 10 mg/m<sup>3</sup>. Form: total particulate matter.</p>
Manganese	<p><b>CA Saskatchewan Provincial (Canada, 4/2021) [Manganese and inorganic compounds]</b>                      STEL 15 minutes: 0.6 mg/m<sup>3</sup> (measured as Mn).                      TWA 8 hours: 0.2 mg/m<sup>3</sup> (measured as Mn).</p>

## Section 8. Exposure controls/personal protection

lead

**CA British Columbia Provincial (Canada, 6/2025) [manganese - elemental & inorganic compounds]** Repr.

TWA 8 hours: 0.1 mg/m<sup>3</sup> (as Mn). Form: inhalable.

TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Mn). Form: respirable.

**CA Ontario Provincial (Canada, 6/2019) [Manganese elemental and inorganic compounds]**

TWA 8 hours: 0.2 mg/m<sup>3</sup> (as Mn).

**CA Quebec Provincial (Canada, 2/2024) [Manganese- fumes, dusts and compounds]**

TWAEV 8 hours: 0.2 mg/m<sup>3</sup> (as Mn). Form: inhalable aerosol fraction.

TWAEV 8 hours: 0.05 mg/m<sup>3</sup> (as Mn). Form: respirable aerosol fraction.

**CA Alberta Provincial (Canada, 3/2023) [Manganese, elemental & inorganic compounds]**

OEL 8 hours: 0.2 mg/m<sup>3</sup> (as Mn).

**CA Saskatchewan Provincial (Canada, 4/2021) [Lead and inorganic compounds]**

STEL 15 minutes: 0.15 mg/m<sup>3</sup> (measured as Pb).

TWA 8 hours: 0.05 mg/m<sup>3</sup> (measured as Pb).

**CA British Columbia Provincial (Canada, 6/2025) Carc 2B, Repr.**

TWA 8 hours: 0.05 mg/m<sup>3</sup> (as Pb).

**CA Ontario Provincial (Canada, 6/2019) [Elemental lead, inorganic compounds of lead]**

TWA 8 hours: 0.05 mg/m<sup>3</sup> (as Pb).

**CA Quebec Provincial (Canada, 2/2024) [Lead and inorganic compounds, dusts and fumes] C3.**

TWAEV 8 hours: 0.05 mg/m<sup>3</sup> (as Pb).

**CA Alberta Provincial (Canada, 3/2023) [Lead elemental & inorganic compounds]**

OEL 8 hours: 0.05 mg/m<sup>3</sup> (as Pb).

**CA Saskatchewan Provincial (Canada, 4/2021) [Cobalt and inorganic compounds]**

STEL 15 minutes: 0.06 mg/m<sup>3</sup> (measured as Co).

TWA 8 hours: 0.02 mg/m<sup>3</sup> (measured as Co).

**CA British Columbia Provincial (Canada, 6/2025) [cobalt and inorganic compounds]**

Carc 2A. Skin sensitizer , Inhalation sensitizer.

TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Co). Form: inhalable.

**CA Ontario Provincial (Canada, 6/2019) [Cobalt and inorganic compounds]**

Cobalt aluminate blue spinel

## Section 8. Exposure controls/personal protection

Cobalt titanite green spinel

TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Co).  
**CA Quebec Provincial (Canada, 2/2024) [Cobalt elemental, and inorganic compounds]** C3. Skin sensitizer , Inhalation sensitizer.  
 TWAEV 8 hours: 0.02 mg/m<sup>3</sup> (as Co).  
 Form: inhalable aerosol fraction.

**CA Saskatchewan Provincial (Canada, 4/2021) [Cobalt and inorganic compounds]**  
 STEL 15 minutes: 0.06 mg/m<sup>3</sup> (measured as Co).  
 TWA 8 hours: 0.02 mg/m<sup>3</sup> (measured as Co).  
**CA British Columbia Provincial (Canada, 6/2025) [cobalt and inorganic compounds]**  
 Carc 2A. Skin sensitizer , Inhalation sensitizer.  
 TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Co). Form: inhalable.

**CA Ontario Provincial (Canada, 6/2019) [Nickel (Insoluble compounds)]**  
 TWA 8 hours: 0.2 mg/m<sup>3</sup> (as Ni). Form: inhalable particulate matter.

**CA Ontario Provincial (Canada, 6/2019) [Cobalt and inorganic compounds]**  
 TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Co).  
**CA Quebec Provincial (Canada, 2/2024) [Cobalt elemental, and inorganic compounds]** C3. Skin sensitizer , Inhalation sensitizer.  
 TWAEV 8 hours: 0.02 mg/m<sup>3</sup> (as Co).  
 Form: inhalable aerosol fraction.

**CA Alberta Provincial (Canada, 3/2023) [Nickel Insoluble compounds]** A1.  
 OEL 8 hours: 0.2 mg/m<sup>3</sup> (as Ni).

Cobalt chromite blue green spinel

**CA Saskatchewan Provincial (Canada, 4/2021) [Cobalt and inorganic compounds]**  
 STEL 15 minutes: 0.06 mg/m<sup>3</sup> (measured as Co).  
 TWA 8 hours: 0.02 mg/m<sup>3</sup> (measured as Co).  
**CA British Columbia Provincial (Canada, 6/2025) [trivalent chromium compounds]**  
 Skin sensitizer , Inhalation sensitizer. Notes: The hazard "sensitizing inhalation" is for water-soluble only.; No British Columbia exposure limit at this time for inhalable form  
 TWA 8 hours: 0.5 mg/m<sup>3</sup> (as Cr(III)). Form: total.  
**CA British Columbia Provincial (Canada, 6/2025) [cobalt and inorganic compounds]**  
 Carc 2A. Skin sensitizer , Inhalation sensitizer.  
 TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Co). Form:

## Section 8. Exposure controls/personal protection

antimony nickel titanium oxide yellow

nickel

inhalable.  
**CA British Columbia Provincial (Canada, 6/2025) [hexavalent chromium compounds]** Carc 1A, Carc 1. Absorbed through skin , Skin sensitizer , Inhalation sensitizer. Notes: No British Columbia exposure limit at this time; The hazards “absorbed through skin” is for water-soluble only.  
**CA Ontario Provincial (Canada, 6/2019) [Cobalt and inorganic compounds]**  
 TWA 8 hours: 0.02 mg/m<sup>3</sup> (as Co).  
**CA Quebec Provincial (Canada, 2/2024) [Chromium (III) compounds]**  
 TWAEV 8 hours: 0.5 mg/m<sup>3</sup> (as Cr).  
**CA Quebec Provincial (Canada, 2/2024) [Cobalt elemental, and inorganic compounds]** C3. Skin sensitizer , Inhalation sensitizer.  
 TWAEV 8 hours: 0.02 mg/m<sup>3</sup> (as Co).  
 Form: inhalable aerosol fraction.  
**CA Quebec Provincial (Canada, 2/2024) [aluminum and its compounds]**  
 TWAEV 8 hours: 5 mg/m<sup>3</sup>. Form: respirable aerosol fraction.  
**CA Alberta Provincial (Canada, 3/2023) [Chromium Metal and Cr III compounds]**  
 OEL 8 hours: 0.5 mg/m<sup>3</sup> (as Cr).  
**CA Ontario Provincial (Canada, 6/2019) [Nickel (Insoluble compounds)]**  
 TWA 8 hours: 0.2 mg/m<sup>3</sup> (as Ni). Form: inhalable particulate matter.  
**CA Alberta Provincial (Canada, 3/2023) [Nickel Insoluble compounds]** A1.  
 OEL 8 hours: 0.2 mg/m<sup>3</sup> (as Ni).  
**CA Saskatchewan Provincial (Canada, 4/2021)**  
 STEL 15 minutes: 3 mg/m<sup>3</sup>. Form: inhalable fraction.  
 TWA 8 hours: 1.5 mg/m<sup>3</sup>. Form: inhalable fraction.  
**CA British Columbia Provincial (Canada, 6/2025) [nickel - insoluble inorganic compounds]** Carc 1A, Carc 1.  
 TWA 8 hours: 0.05 mg/m<sup>3</sup> (as Ni).  
**CA British Columbia Provincial (Canada, 6/2025) [nickel - elemental, soluble inorganic compounds]** Carc 1, Carc 2B.  
 TWA 8 hours: 0.05 mg/m<sup>3</sup> (as Ni).  
**CA Ontario Provincial (Canada, 6/2019)**  
 TWA 8 hours: 1 mg/m<sup>3</sup>. Form: inhalable particulate matter.  
**CA Quebec Provincial (Canada, 2/2024) [nickel and inorganic compounds - metal]**  
 TWAEV 8 hours: 1.5 mg/m<sup>3</sup>. Form: inhalable aerosol fraction.  
**CA Alberta Provincial (Canada, 3/2023)**

## Section 8. Exposure controls/personal protection

strontium chromate

OEL 8 hours: 1.5 mg/m<sup>3</sup>.  
**CA Saskatchewan Provincial (Canada, 4/2021)**  
 STEL 15 minutes: 0.0015 mg/m<sup>3</sup> (measured as Cr).  
 TWA 8 hours: 0.0005 mg/m<sup>3</sup> (measured as Cr).  
**CA British Columbia Provincial (Canada, 6/2025) Carc 1A.** Skin sensitizer , Inhalation sensitizer.  
 TWA 8 hours: 0.0005 mg/m<sup>3</sup> (as Cr). Form: total.  
**CA Ontario Provincial (Canada, 6/2019)**  
 TWA 8 hours: 0.0005 mg/m<sup>3</sup> (as Cr).  
**CA Quebec Provincial (Canada, 2/2024) C2.**  
 TWAEV 8 hours: 0.0005 mg/m<sup>3</sup> (as Cr).  
**CA Alberta Provincial (Canada, 3/2023) A2.**  
 OEL 8 hours: 0.0005 mg/m<sup>3</sup> (as Cr).

cadmium sulfoselenide red

**CA Saskatchewan Provincial (Canada, 4/2021) [Cadmium, and compounds]**  
 STEL 15 minutes: 0.006 mg/m<sup>3</sup> (measured as Cd). Form: respirable fraction.  
 STEL 15 minutes: 0.03 mg/m<sup>3</sup> (measured as Cd). Form: total fraction.  
 TWA 8 hours: 0.002 mg/m<sup>3</sup> (measured as Cd). Form: respirable fraction.  
 TWA 8 hours: 0.01 mg/m<sup>3</sup> (measured as Cd). Form: total fraction.  
**CA British Columbia Provincial (Canada, 6/2025) [cadmium and compounds] Carc 2A, Carc 1.**  
 TWA 8 hours: 0.01 mg/m<sup>3</sup> (as Cd).  
 TWA 8 hours: 0.002 mg/m<sup>3</sup> (as Cd). Form: respirable.  
**CA Quebec Provincial (Canada, 2/2024) [Cadmium elemental and compounds] C2.**  
 TWAEV 8 hours: 0.01 mg/m<sup>3</sup> (as Cd).  
**CA Alberta Provincial (Canada, 3/2023) [Cadmium compounds] A2.**  
 OEL 8 hours: 0.002 mg/m<sup>3</sup> (as Cd). Form: respirable.

### Biological exposure indices

None known.

### **Appropriate engineering controls**

: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

### **Environmental exposure controls**

: Not applicable.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. 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.
- 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. [Massive solid.]
- Color** : Gray. / Silver. / Various (Based on paint pigment specified by customer.)
- Odor** : Not available.
- Odor threshold** : Not available.
- Melting point and freezing point** : 593 to 704°C (1099.4 to 1299.2°F)
- Boiling point or initial boiling point and boiling range** : Not available.
- Evaporation rate** : Not applicable.
- Flammability** : Not available.
- Lower and upper explosion limit or lower and upper flammability limit** : Not applicable.
- Flash point** : Not applicable.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : Not available.
- pH** : Not applicable.
- Viscosity** : Dynamic (room temperature): Not applicable.  
Kinematic (room temperature): Not applicable.  
Kinematic (40°C (104°F)): Not applicable.

<b>Solubility</b> :	<b>Media</b>	<b>Result</b>
	water	Not soluble

**Miscible with water** : No.

## Section 9. Physical and chemical properties

<b>Partition coefficient — n-octanol/water (logarithmic value)</b>	: Not applicable.
<b>Vapor pressure</b>	: Not applicable.
<b>Density</b>	: 2.69 to 2.74 g/cm <sup>3</sup>
<b>Relative density</b>	: 2.5 to 2.9
<b>Relative vapor density</b>	: Not applicable.
<b><u>Particle characteristics</u></b>	
<b>Median particle size</b>	: Not available.
<b><u>Other information</u></b>	
<b>Physical/chemical properties comments</b>	: No additional information.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Conditions to avoid</b>	: Avoid dust generation.
<b>Incompatible materials</b>	: 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.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

<b>Product/ingredient name</b>	<b>Result</b>	
silicon	<b>Rat - Oral - LD50</b> 3160 mg/kg	
Manganese	<b>Rat - Oral - LD50</b> 9 g/kg	
	<b>Rat - Inhalation - LC50 Dusts and mists</b> 5.14 mg/l [4 hours]	OECD [Acute Inhalation Toxicity-Fixed Dose Procedure]
lead	<b>Rat - Male, Female - Oral - LD50</b> >2000 mg/kg	OECD [Acute Oral toxicity - Acute Toxic Class Method]
	<b>Rat - Male, Female - Dermal - LD50</b> >2000 mg/kg	OECD [Acute Dermal Toxicity]
	<b>Rat - Male, Female - Inhalation - LC50 Dusts and mists</b>	OECD [Acute Inhalation Toxicity]

## Section 11. Toxicological information

Cobalt aluminate blue spinel	>5.05 mg/l [4 hours] <b>Rat - Male, Female - Inhalation - LC50 Dusts and mists</b>	OECD [Acute Inhalation Toxicity - Acute Toxic Class (ATC) Method]
Cobalt chromite blue green spinel	>5.06 mg/l [4 hours] <b>Rat - Female - Oral - LD50</b> >5000 mg/kg <b>Rat - Male, Female - Inhalation - LC50 Dusts and mists</b>	OECD 423 [Acute Oral toxicity - Acute Toxic Class Method] OECD 436 [Acute Inhalation Toxicity - Acute Toxic Class (ATC) Method]
nickel	>5.05 mg/l [4 hours] <b>Rat - Oral - LD50</b>	
strontium chromate	>2000 mg/kg <b>Rat - Oral - LD50</b> 811 mg/kg <b>Rat - Male, Female - Inhalation - LC50 Dusts and mists</b> 0.27 to 0.51 mg/l [4 hours]	OECD [Acute Inhalation Toxicity]

**Conclusion/Summary [Product]** : Not available.

### Skin corrosion/irritation

#### **Product/ingredient name**

Manganese

#### **Result**

**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**

silicon

Manganese

#### **Result**

**Rabbit - Eyes - Mild irritant**

Amount/concentration applied: 3 mg

**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]** : Dust : May cause sensitization by inhalation.

## Section 11. Toxicological information

### 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	IARC	NTP	ACGIH
Manganese	-	-	A4
lead	2B	Reasonably anticipated to be a human carcinogen.	A3
Cobalt aluminate blue spinel	2B	Reasonably anticipated to be a human carcinogen.	A3
Cobalt titanite green spinel	1	Known to be a human carcinogen.	A1
Cobalt chromite blue green spinel	2B	Reasonably anticipated to be a human carcinogen.	A3
antimony nickel titanium oxide yellow	1	Known to be a human carcinogen.	A1
nickel	2B	Reasonably anticipated to be a human carcinogen.	A5
strontium chromate	1	Known to be a human carcinogen.	A2
cadmium sulfoselenide red	1	-	-

### 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)

Product/ingredient name	Result
Cobalt chromite blue green spinel	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (lungs) (inhalation) - Category 2
strontium chromate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

### 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
Cobalt titanite green spinel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) (inhalation) - Category 1
Cobalt chromite blue green spinel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bone marrow, heart, lungs) (inhalation) - Category 2
nickel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory tract) (inhalation) - Category 1

## Section 11. Toxicological information

strontium chromate

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, kidneys, liver, lungs) - Category 1

cadmium sulfoselenide red

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

### 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** : May cause an allergic skin reaction.
- Ingestion** : Not applicable.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
- Inhalation** : Adverse symptoms may include the following:
  - wheezing and breathing difficulties
  - asthma
  - reduced fetal weight
  - increase in fetal deaths
  - skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
  - irritation
  - redness
  - reduced fetal weight
  - increase in fetal deaths
  - skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
  - reduced fetal weight
  - increase in fetal deaths
  - skeletal malformations

### 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.

### Potential chronic health effects

## Section 11. Toxicological information

- 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** : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : May damage fertility or the unborn child.  
May cause harm to breast-fed children.

### 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)
Pretreated and/or Painted Aluminum Extrusions (AAMA 2604, 2605)	13667.7	N/A	N/A	N/A	N/A
silicon	3160	N/A	N/A	N/A	N/A
Manganese	9000	N/A	N/A	N/A	5.14
lead	2500	2500	N/A	N/A	N/A
nickel	2500	N/A	N/A	N/A	N/A
strontium chromate	811	N/A	N/A	N/A	0.27
cadmium sulfoselenide red	100	N/A	N/A	3	N/A

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Effect
Manganese	<b>Acute - EC50 - Fresh water</b> Aquatic plants - Duckweed - <i>Lemna minor</i> 31 mg/l [4 days]	<u>Effect</u> : Growth
	<b>Acute - LC50 - Fresh water</b> Fish - Fathead minnow - <i>Pimephales promelas</i> 28 mg/l [96 hours]	<u>Effect</u> : Mortality
	<b>Acute - LC50 - Fresh water</b> Daphnia - Water flea - <i>Daphnia magna</i> 29 mg/l [48 hours]	<u>Effect</u> : Mortality
	<b>Chronic - NOEC - Fresh water</b> Daphnia - <i>Ceriodaphnia dubia</i> 1.7 mg/l [8 days]	OECD [Daphnia Magna Reproduction Test]
	<b>Acute - LC50 - Fresh water</b> Crustaceans - Water flea - <i>Ceriodaphnia reticulata</i> <u>Age</u> : <4 hours 530 µg/l [48 hours]	<u>Effect</u> : Mortality
lead		

## Section 12. Ecological information

	<p><b>Acute - LC50 - Fresh water</b>                  Fish - common carp - <i>Cyprinus carpio</i>                  - Juvenile (Fledgling, Hatchling, Weanling)  <u>Size</u>: 3.5 cm                  0.44 ppm [96 hours]</p>	<p><u>Effect</u>: Mortality</p>
	<p><b>Chronic - NOEC - Fresh water</b>                  Fish - common carp - <i>Cyprinus carpio</i>  <u>Age</u>: 13 months; <u>Size</u>: 10.5 cm;  <u>Weight</u>: 27.8 g                  0.03 µg/l [4 weeks]</p>	<p><u>Effect</u>: Accumulation</p>
	<p><b>Acute - EC50 - Fresh water</b>                  Algae - Green algae - <i>Raphidocelis subcapitata</i> - Exponential growth phase                  20.5 µg/l [72 hours]</p>	<p><u>Effect</u>: Population OECD</p>
	<p><b>Chronic - EC10 - Fresh water</b>                  Algae - Green algae - <i>Raphidocelis subcapitata</i> - Exponential growth phase                  3.9 µg/l [72 hours]</p>	<p><u>Effect</u>: Population OECD</p>
nickel	<p><b>Acute - EC50 - Fresh water</b>                  Aquatic plants - Duckweed - <i>Lemna minor</i>                  450 µg/l [4 days]</p>	<p><u>Effect</u>: Growth</p>
	<p><b>Chronic - NOEC - Marine water</b>                  Algae - Dinoflagellate - <i>Glenodinium halli</i>                  100 mg/l [72 hours]</p>	<p><u>Effect</u>: Population</p>
	<p><b>Chronic - NOEC - Fresh water</b>                  Fish - common carp - <i>Cyprinus carpio</i>  <u>Age</u>: 13 months; <u>Size</u>: 10.5 cm;  <u>Weight</u>: 27.8 g                  3.5 µg/l [4 weeks]</p>	<p><u>Effect</u>: Accumulation</p>
	<p><b>Acute - LC50 - Fresh water</b>                  Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> - Juvenile (Fledgling, Hatchling, Weanling)  <u>Age</u>: 2 to 8 hours                  34.6 µg/l [48 hours]</p>	<p><u>Effect</u>: Mortality                  US EPA, OECD</p>
	<p><b>Chronic - EC10</b>                  Daphnia - Water flea - <i>Daphnia magna</i> - Neonate  <u>Age</u>: &lt;24 hours                  6.9 µg/l [21 days]</p>	<p><u>Effect</u>: Reproduction                  OECD</p>
	<p><b>Acute - LC50 - Fresh water</b>                  Fish - Indian catfish - <i>Heteropneustes fossilis</i>                  47.5 ng/l [96 hours]</p>	<p><u>Effect</u>: Mortality</p>

**Conclusion/Summary [Product]** : Not available.

### Persistence and degradability

**Conclusion/Summary [Product]** : Not available.

## Section 12. Ecological information

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
cadmium sulfoselenide red	-	1345	High

### Mobility in soil

**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

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

### Additional information

**DOT Classification** : **Reportable quantity** 1111.1 lbs / 504.44 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.

## Section 14. Transport information

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

## Section 15. Regulatory information

### Canadian lists

**Canadian NPRI** : The following components are listed: aluminum (fume or dust only); zinc (and its compounds); manganese (and its compounds); copper (and its compounds); lead (and its compounds); cobalt (and its compounds); cobalt (and its compounds); hexavalent chromium (and its compounds); cadmium (and its compounds)

**CEPA Toxic substances** : None of the components are listed.

**Canada inventory** : Not determined.

### 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

## Section 16. Other information

### History

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

**Date of previous issue** : No previous validation

**Version** : 1

**Prepared by** : Sphera Solutions

**Key to abbreviations** : ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 DOT = Department of Transportation  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 HPR = Hazardous Products Regulations  
 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

### Procedure used to derive the classification

**Date of issue/Date of revision** : 27/02/2026 **Date of previous issue** : No previous validation **Version** : 1 18/19

## Section 16. Other information

Classification	Justification
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1A	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Effects on or via lactation	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

**References** : HPR = Hazardous Products Regulations

 Indicates information that has changed from previously issued version.

### Notice to reader

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