SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
   Product form: Mixture (Sheet and Shot)
   Trade name: Aluminum Sheet and Shot – 3XXX Series Alloy

1.2. Relevant identified uses of the substance or mixture and uses advised against
   Use of the substance/mixture: Raw material and the production of aluminum containing products

1.3. Details of the supplier of the safety data sheet
   Manufacturer: Aleris International, Inc.
   25825 Science Park Drive, Suite 400
   Beachwood, OH 44122

1.4. Emergency telephone number
   Emergency number: CHEMTREC 1 800 424 9300
   (24 Hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
   Aluminum sheet and shot alloys are considered “articles” and not hazardous in solid form. However, the formation of dust, fines or fumes from the processing of aluminium sheet or shot by cutting, milling, grinding, heating and welding could result in the following hazards as identified in OSHA’s hazard communication (HazCom 2012):
   - Combustible Dust: H232
   - Water Reactive 3: H261
   - Flammable Solid 1: H228

   Full text of H-statements: see Section 16

2.2. Label elements
   No labelling is applicable.

2.3. Other hazards
   According to criteria of OSHA’s hazard communication (HazCom 21012), this product as supplied is not classified as hazardous.

2.4. Unknown acute toxicity
   Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substance
   Not applicable.

3.2. Mixture
   ALUMINUM SHEET AND SHOT - 3XXX SERIES ALLOY
ALUMINUM SHEET AND SHOT - 3XXX SERIES
ALLOY
Safety Data Sheet

Date of issue: 06/08/2015  Revision date: 06/03/2015  Supersedes: Version 1  Version: 2.0

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice.
First-aid measures after inhalation : Unlikely route of exposure.
Dust from processing: Allow victim to breathe fresh air. Allow the victim to rest. If feel unwell, seek medical attention.
First-aid measures after skin contact : Wash hands with water and soap.
Dust from processing: Wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact : Unlikely route of exposure.
Dust from processing: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion : Unlikely route of exposure. Dust from processing: Ingestion is not considered a potential route of exposure. In case of accidental intake, rinse mouth

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after eye contact : Dust from processing: May cause physical reversible eye irritation. Redness, watering.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media : This product does not present fire or explosion hazards as shipped. Fine turnings, fine dust from processing may be readily ignitable. Use dry chemical extinguisher.

Unsuitable extinguishing media : Do not use water or foam.

5.2. Special hazards arising from the substance or mixture
Fire hazard : This product does not present fire or explosion hazards as shipped. Fine turnings, fine dust from processing may be readily ignitable. Flammable solid. May form combustible dust concentrations in air.

Explosion hazard : This product does not present fire or explosion hazards as shipped. Avoid generation of dust; fine dust dispersed in air in sufficient concentration, and in the presence of an ignition source is a potential dust explosion hazards.

Reactivity : This product is not reactive as supplied. Dust or fine particles are violently reactive to strong oxidizers with considerable heat generation.
5.3. **Advice for firefighters**

Protective equipment for firefighters: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

**SECTION 6: Accidental release measures**

6.1. **Personal precautions, protective equipment and emergency procedures**

**General measures**: Dust and fumes from processing: Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

6.1.1. **For non-emergency personnel**

No additional information available.

6.1.2. **For emergency responders**

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to Section 8: “Exposure controls/personal protection”.

6.2. **Environmental precautions**

Avoid release to the environment.

6.3. **Methods and material for containment and cleaning up**

For containment: Contain for re-use.

Methods for cleaning up: Recover mechanically the product. No special precautions for large product fragments. For dust cleanup use protective equipment. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. Avoid dispersal of dust in the air (i.e. cleaning dust surfaces with compressed air). In case of formation of dust during processing, non-sparking tools should be used.

Other information: Dispose of materials or solid residues at an authorized site. Clean up spilled material and place in dry containers.

6.4. **Reference to other sections**

For further information refer to Section 8: Exposure-controls/personal protection.

**SECTION 7: Handling and storage**

7.1. **Precautions for safe handling**

Wear appropriate personal protective equipment. In case of formation of dust during processing, routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build statics electricity charges when subjected to the friction of transfer and mixture operations. Provide adequate precautions, such as electrical grounding and bonding or inert atmospheres.

**Hygiene measures**: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. **Conditions for safe storage, including any incompatibilities**

Storage conditions: Store in a dry area.

Incompatible materials: Strong acids and alkalies. Strong oxidizers.

7.3. **Specific end use(s)**

No additional information available.

**SECTION 8: Exposure controls/personal protection**

8.1. **Control parameters**

<table>
<thead>
<tr>
<th>Aluminum (7429-90-5)</th>
<th>ACGIH ACGIH TWA (mg/m³)</th>
<th>1 mg/m³ (respirable fraction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
</tr>
<tr>
<td>OSHA</td>
<td>15 mg/m³ (total dust)</td>
<td>5 mg/m³ (respirable fraction)</td>
</tr>
<tr>
<td>Mexico-Occupational</td>
<td>TWA (LMPE-PPT) (mg/m³)</td>
<td>10 mg/m³ (dust)</td>
</tr>
</tbody>
</table>

Exposure limits
### Antimony (7440-36-0)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.5 mg/m³</td>
<td>0.5 mg/m³</td>
<td>TWA (LMPE-PPT) (mg/m³) 0.5 mg/m³ (dust)</td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Beryllium (7440-41-7)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>OSHA PEL (Ceiling) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.00005 mg/m³ (inhalable fraction)</td>
<td></td>
<td></td>
<td>TWA (LMPE-PPT) (mg/m³) 0.002 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td>2 µg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>5 µg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cadmium (7440-43-9)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>OSHA PEL (Ceiling) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.01 mg/m³</td>
<td></td>
<td></td>
<td>TWA (LMPE-PPT) (mg/m³) 0.01 mg/m³ (total dust) 0.002 mg/m³ (respirable dust)</td>
</tr>
<tr>
<td>OSHA</td>
<td>0.1 mg/m³ (fume)</td>
<td>0.2 mg/m³ (dust)</td>
<td>5 µg/m³</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>0.3 mg/m³ (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect-fume) 0.6 mg/m³ (applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect-dust)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Chromium (7440-47-3)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.5 mg/m³</td>
<td></td>
<td>TWA (LMPE-PPT) (mg/m³) 0.5 mg/m³</td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Copper (7440-50-8)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.2 mg/m³ (fume)</td>
<td></td>
<td>STEL (LMPE-CT) (mg/m³) 2 mg/m³ (dust) 2 mg/m³ (fume)</td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>1 mg/m³ (dust and mist)</td>
<td></td>
</tr>
<tr>
<td>Mexico-Occupational Exposure limits</td>
<td>STEL (LMPE-CT) (mg/m³) 2 mg/m³ (dust) 2 mg/m³ (fume)</td>
<td>TWA (LMPE-PPT) (mg/m³) 0.2 mg/m³ (fume) 1 mg/m³ (dust / mist)</td>
<td></td>
</tr>
</tbody>
</table>

### Lead (7439-92-1)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.05 mg/m³</td>
<td></td>
<td>TWA (LMPE-PPT) (mg/m³) 0.15 mg/m³ (dust, fume)</td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>50 µg/m³</td>
<td></td>
</tr>
</tbody>
</table>

### Manganese (7439-96-5)

<table>
<thead>
<tr>
<th>Source</th>
<th>ACGIH TWA (mg/m³)</th>
<th>OSHA PEL (Ceiling) (mg/m³)</th>
<th>Mexico-Occupational Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.02 mg/m³ (respirable fraction) 0.1 mg/m³ (inhalable fraction)</td>
<td>5 mg/m³ (fume)</td>
<td>STEL (LMPE-CT) (mg/m³) 3 mg/m³ (fume)</td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>5 mg/m³ (fume)</td>
<td></td>
</tr>
<tr>
<td>Mexico-Occupational Exposure limits</td>
<td>STEL (LMPE-CT) (mg/m³) 3 mg/m³ (fume)</td>
<td>TWA (LMPE-PPT) (mg/m³) 0.2 mg/m³ (fume)</td>
<td></td>
</tr>
</tbody>
</table>
8.2. Exposure controls

Appropriate engineering controls:
- Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.
- In case of formation of dust during processing: It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust dusts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area. Use only appropriately classified electrical equipment and powered industrial trucks.

Personal protective equipment:
- Safety glasses. Gloves. Protective clothing.
- Protective gloves.
- Safety glasses.
- Wear suitable protective clothing.
- Dust from processing: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Silver/gray metal sheet</td>
</tr>
<tr>
<td>Color</td>
<td>Silver/ gray</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>970-1200 °F (520-650 °C)</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>4550 °F (2450 °C)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
### Section 10: Stability and Reactivity

**10.1. Reactivity**

This product is not reactive as supplied. Dust or fine particles are violently reactive to strong oxidizers with considerable heat generation.

**10.2. Chemical stability**

Stable under recommended storage conditions.

**10.3. Possibility of hazardous reactions**

Hazardous polymerization does not occur.

**10.4. Conditions to avoid**

Avoid storage or potential contact with strong oxidizing agents.

Avoid dust formation.

**10.5. Incompatible materials**

Halocarbons, mercury, chlorine, chlorates, bromates, iodates, peroxides, perchlorates, nitrates, nitrites, oxides, performates, persulfates, halogens, oxides of nitrogen, melted sulfates, sulfur dioxide, propylene dichloride sodium carbide, sodium carbonate and sodium hydroxide.

**10.6. Hazardous decomposition products**

No additional information available.

### Section 11: Toxicological Information

**11.1. Information on toxicological effects**

Acute toxicity: Not classified

(Based on available data, the classification criteria are not met.)

**Antimony (7440-36-0)**

ATE US (oral): 7000 mg/kg

**Bismuth (7440-69-9)**

ATE US (oral): 5000 mg/kg

**Cadmium (7440-43-9)**

LD50 oral rat: 1140 mg/kg

LC50 inhalation rat (mg/l): 25 mg/m³ (Exposure time: 30 min)

ATE US (oral): 2330 mg/kg

ATE US (dust,mist): 0.005 mg/l/4h

**Copper (7440-50-8)**

ATE US (oral): 500 mg/kg
### Section 11: Toxicological properties

#### Iron (7439-89-6)
- LD50 oral rat: 984 mg/kg
- ATE US (oral): 984 mg/kg bodyweight

#### Lead (7439-92-1)
- ATE US (oral): 500 mg/kg

#### Magnesium (7439-95-4)
- LD50 oral rat: 230 mg/kg

#### Nickel (7440-02-0)
- LD50 oral rat: > 9000 mg/kg

#### Silicon (7440-21-3)
- ATE US (oral): 3160 mg/kg

#### Tin (7440-31-5)
- LD50 oral rat: 700 mg/kg

- Skin corrosion/irritation: Not classified (Based on available data, the classification criteria are not met.)
- Serious eye damage/irritation: Not classified (Based on available data, the classification criteria are not met.)
- Respiratory or skin sensitisation: Not classified (Based on available data, the classification criteria are not met.)
- Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met.)
- Carcinogenicity: Not classified (Based on available data, the classification criteria are not met.)

#### Beryllium (7440-41-7)
- IARC group: 1 - Carcinogenic to humans
- National Toxicology Program (NTP) Status: 2 - Known Human Carcinogens

#### Cadmium (7440-43-9)
- IARC group: 1 - Carcinogenic to humans
- National Toxicology Program (NTP) Status: 2 - Known Human Carcinogens

#### Chromium (7440-47-3)
- IARC group: 3 - Not classifiable

#### Lead (7439-92-1)
- IARC group: 2A - Probably carcinogenic to humans
- National Toxicology Program (NTP) Status: 3 - Reasonably anticipated to be Human Carcinogen

#### Nickel (7440-02-0)
- IARC group: 2B - Possibly carcinogenic to humans
- National Toxicology Program (NTP) Status: 3 - Reasonably anticipated to be Human Carcinogen

- Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met.)
- Specific target organ toxicity (single exposure): Not classified (Based on available data, the classification criteria are not met.)
- Specific target organ toxicity (repeated exposure): Not classified (Based on available data, the classification criteria are not met.)
- Aspiration hazard: Not classified (Based on available data, the classification criteria are not met.)

### Section 12: Ecological information

#### ALUMINUM SHEET AND SHOT - 3XXX SERIES

**ALLOY Safety Data Sheet**

Date of issue: 06/08/2015 Revision date: 06/03/2015 Supersedes: Version 1 Version: 2.0
12.1. Toxicity
Ecology - general: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cadmium (7440-43-9)</td>
<td>0.003 mg/l</td>
<td>0.0244 mg/l</td>
<td>0.006 mg/l</td>
</tr>
<tr>
<td></td>
<td>(Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])</td>
<td>(Exposure time: 48 h - Species: Daphnia magna [Static])</td>
<td>(Exposure time: 96 h - Species: Oncorhynchus mykiss [static])</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper (7440-50-8)</td>
<td>0.0068 - 0.0156 mg/l</td>
<td>0.03 mg/l</td>
<td>&lt; 0.3 mg/l</td>
</tr>
<tr>
<td></td>
<td>(Exposure time: 96 h - Species: Pimephales promelas)</td>
<td>(Exposure time: 48 h - Species: Daphnia magna [Static])</td>
<td>(Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (7439-92-1)</td>
<td>0.44 mg/l</td>
<td>600 μg/l</td>
<td>1.17 mg/l</td>
</tr>
<tr>
<td></td>
<td>(Exposure time: 96 h - Species: Cyprinus carpio [semi-static])</td>
<td>(Exposure time: 48 h - Species: water flea)</td>
<td>(Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel (7440-02-0)</td>
<td>&gt; 100 mg/l</td>
<td>&gt; 100 mg/l</td>
<td>1 mg/l</td>
</tr>
<tr>
<td></td>
<td>(Exposure time: 96 h - Species: Brachydanio rerio)</td>
<td>(Exposure time: 48 h - Species: Daphnia magna)</td>
<td>(Exposure time: 96 h - Species: Cyprinus carpio [semi-static])</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC50 fish 1</th>
<th>EC50 Daphnia 1</th>
<th>LC50 fish 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc (7440-66-6)</td>
<td>2.16 - 3.05 mg/l</td>
<td>0.139 - 0.908 mg/l</td>
<td>0.211 - 0.269 mg/l</td>
</tr>
<tr>
<td></td>
<td>(Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
<td>(Exposure time: 48 h - Species: Daphnia magna [Static])</td>
<td>(Exposure time: 96 h - Species: Pimephales promelas [semi-static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available.

12.3. Bioaccumulative potential
No additional information available.

12.4. Mobility in soil
No additional information available.

12.5. Other adverse effects
Effect on ozone layer: No additional information available
Effect on the global warming: No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Waste disposal recommendations: Reuse or recycle material wherever possible. If reuse or recycling not possible, disposal must be made according to local or governmental regulations.
Additional Information: Waste codes must be determined at the point of waste generation. Refer to 40 CFR 261 or state equivalent in the U.S.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. US Department of Transporation (DOT) information
Not regulated for transport.

14.2. Additional information
Other information: No supplementary information available.
14.3. **European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)**  
No additional information available.

14.4. **Transport by sea**  
No additional information available.

14.5. **Air transport**  
No additional information available.

## SECTION 15: Regulatory information

### 15.1. **US federal regulations**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Listed on the United States TSCA (Toxic Substances Control Act) inventory</th>
<th>Listed on United States SARA Section 313</th>
<th>SARA Section 313 - Emission Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aluminum</strong> (7429-90-5)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td>Listed on United States SARA Section 313</td>
<td>1.0 % (dust or fume only)</td>
</tr>
<tr>
<td><strong>Antimony</strong> (7440-36-0)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td>Listed on United States SARA Section 313</td>
<td>1.0 %</td>
</tr>
<tr>
<td><strong>Beryllium-Pure</strong> (7440-41-7)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td>Listed on United States SARA Section 313</td>
<td>0.1 %</td>
</tr>
<tr>
<td><strong>Boron</strong> (7440-42-8)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bismuth</strong> (7440-69-9)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cadmium</strong> (7440-43-9)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td>Listed on United States SARA Section 313</td>
<td>0.1 %</td>
</tr>
<tr>
<td><strong>Chromium</strong> (7440-47-3)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td>Listed on United States SARA Section 313</td>
<td>1.0 %</td>
</tr>
<tr>
<td><strong>Copper</strong> (7440-50-8)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td>Listed on United States SARA Section 313</td>
<td>1.0 %</td>
</tr>
<tr>
<td><strong>Iron</strong> (7439-89-6)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gallium</strong> (7440-55-3)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Lead (7439-92-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on United States SARA Section 313  
SARA Section 313 - Emission Reporting | 0.1 %

### Magnesium (7439-95-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

### Manganese (7439-96-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on United States SARA Section 313  
SARA Section 313 - Emission Reporting | 1.0 %

### Nickel (7440-02-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on United States SARA Section 313  
SARA Section 313 - Emission Reporting | 0.1 %

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

### Tin (7440-31-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

### Titanium (7440-32-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

### Zinc (7440-66-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on United States SARA Section 313  
SARA Section 313 - Emission Reporting | 1.0 % (dust or fume only)

### Vanadium (7440-62-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory  
Listed on United States SARA Section 313  
SARA Section 313 - Emission Reporting | 1.0 % (except when contained in an alloy)

### Zirconium (7440-67-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2 US state regulations

<table>
<thead>
<tr>
<th>Element</th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beryllium-Pure (7440-41-7)</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>0.1 µg/day</td>
</tr>
<tr>
<td>Cadmium (7440-43-9)</td>
<td></td>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
### Lead (7439-92-1)

<table>
<thead>
<tr>
<th>Prop</th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>15 µg/day</td>
</tr>
</tbody>
</table>

### Nickel (7440-02-0)

<table>
<thead>
<tr>
<th>Prop</th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

### International regulations

#### Canada

15.3. **Aluminum-metal (7429-90-5)**

- Listed on the Canadian DSL (Domestic Sustances List) and on the Canadian IDL (Ingredient Disclosure List)
- WHMIS Classification: Class B Division 6 - Reactive Flammable Material

15.3.1. **Antimony (7440-36-0)**

- Listed on the Canadian DSL (Domestic Sustances List) and on the Canadian IDL (Ingredient Disclosure List)
- WHMIS Classification: Uncontrolled product according to WHMIS classification criteria

15.3.2. **Beryllium (7440-41-7)**

- Listed on the Canadian DSL (Domestic Sustances List) and on the Canadian IDL (Ingredient Disclosure List)
- WHMIS Classification: Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
  
  Class D Division 2 Subdivision B - Toxic material causing other toxic effects

15.3.3. **Boron (7440-42-8)**

- Listed on the Canadian DSL (Domestic Sustances List)

15.3.4. **Bismuth (7440-69-9)**

- Listed on the Canadian DSL (Domestic Sustances List)
- WHMIS Classification: Uncontrolled product according to WHMIS classification criteria

15.3.5. **Cadmium (7440-43-9)**

- Listed on the Canadian DSL (Domestic Sustances List) and on the Canadian IDL (Ingredient Disclosure List)
- WHMIS Classification: Class D Division 1 Subdivision A - Very toxic material causing immediate and serious toxic effects
  
  Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

15.3.6. **Chromium (7440-47-3)**

- Listed on the Canadian DSL (Domestic Sustances List) and on the Canadian IDL (Ingredient Disclosure List)
- WHMIS Classification: Uncontrolled product according to WHMIS classification criteria

15.3.7. **Copper (7440-50-8)**

- Listed on the Canadian DSL (Domestic Sustances List) and on the Canadian IDL (Ingredient Disclosure List)
- WHMIS Classification: Uncontrolled product according to WHMIS classification criteria

15.3.8. **Iron (7439-89-6)**

- Listed on the Canadian DSL (Domestic Sustances List)
- WHMIS Classification: Uncontrolled product according to WHMIS classification criteria
15.3.2. European Union

**Aluminum-metal (7429-90-5)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Antimony (7440-36-0)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Beryllium-Pure (7440-41-7)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**Boron (7440-42-8)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Bismuth (7440-69-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Cadmium (7440-43-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Chromium (7440-47-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Copper (7440-50-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Iron (7439-89-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Gallium (7440-55-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Lead (7439-92-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Magnesium (7439-95-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Manganese (7439-96-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Nickel (7440-02-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Silicon (7440-21-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Tin (7440-31-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Titanium (7440-32-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Zinc (7440-66-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Vanadium (7440-62-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Zirconium (7440-67-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.3.3. Classification according to Regulation (EC) No. 1272/2008 [CLP]
No additional information available

15.3.4. Classification according to Directive 67/548/EEC [DSD] or 1999/45EC [DPD]
No additional information available

15.4. Other nations
### Aluminum-metal (7429-90-5)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### Antimony (7440-36-0)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Japanese Pollutant Release and Transfer Register Law (PRTR Law)

### Beryllium-Pure (7440-41-7)
- Listed on IARC (International Agency for Research on Cancer)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Japanese Pollutant Release and Transfer Register Law (PRTR Law)

### Boron (7440-42-8)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### Bismuth (7440-69-9)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

### Cadmium (7440-43-9)
- Listed on IARC (International Agency for Research on Cancer)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Japanese Pollutant Release and Transfer Register Law (PRTR Law)

### Chromium (7440-47-3)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Japanese Pollutant Release and Transfer Register Law (PRTR Law)

### Copper (7440-50-8)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
<table>
<thead>
<tr>
<th>Chemical (CAS Number)</th>
<th>Listed on the AICS (Australian Inventory of Chemical Substances)</th>
<th>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</th>
<th>Listed on the Korean ECL (Existing Chemicals List)</th>
<th>Listed on NZIoC (New Zealand Inventory of Chemicals)</th>
<th>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (7439-89-6)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Gallium (7440-55-3)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Lead (7439-92-1)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Japanese ENCS (Existing &amp; New Chemical Substances) inventory</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
</tr>
<tr>
<td>Magnesium (7439-95-4)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Manganese (7439-96-5)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Nickel (7440-02-0)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Silicon (7440-21-3)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
<tr>
<td>Tin (7440-31-5)</td>
<td>Listed on the AICS (Australian Inventory of Chemical Substances)</td>
<td>Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)</td>
<td>Listed on the Korean ECL (Existing Chemicals List)</td>
<td>Listed on NZIoC (New Zealand Inventory of Chemicals)</td>
<td>Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)</td>
</tr>
</tbody>
</table>
SECTION 16: Other information

Other information : None.
Abbreviations and acronyms :
- ACGIH (American Conference of Governmental Industrial Hygienists).
- ATE - acute toxicity estimate.
- CAS - Chemical Abstracts Service.
- GHS - Globally Harmonized System.
- TWA - Time Weighted Average.
- PEL - Permissible Exposure Level.
- STEL - Short-Term Exposure Limit.
- OSHA - Occupational Safety and Health Administration.
- IARC - International Agency for Research on Cancer.

Full text of H-statements:

<table>
<thead>
<tr>
<th>Flammable Solid 1</th>
<th>Flammable solids, Category 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-react. 3</td>
<td>Substances and Mixtures which, in contact with water, emit flammable gases, Category 3</td>
</tr>
<tr>
<td>H228</td>
<td>Flammable solid</td>
</tr>
<tr>
<td>H232</td>
<td>May form combustible dust concentrations in air</td>
</tr>
<tr>
<td>H261</td>
<td>In contact with water releases flammable gases</td>
</tr>
</tbody>
</table>

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.