

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

**1.1. Product identifier**

Product name : Aluminum Sheet and Foil  
: Aluminum Alloys: 1XXX, 1050, 1060, 1145, 1350, 1200, 1100, 1235, 3XXX, 3003, 3102, 3104, 5XXX, 5010, 8XXX 8011, 8111

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Various applications for aluminum products :

**1.3. Details of the supplier of the safety data sheet**

Lite Gauge Metals, Inc.  
1195 Moore Road  
Avon, Ohio 44145 - USA  
T: 800-892-1145

**1.4. Emergency telephone number**

Emergency number : 800-892-1145

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

GHS-US classification

Not Classified

**2.2. Label elements**

GHS-US labeling

No labeling applicable

**2.3. Other hazards**

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS08

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS-US) :

Do not breathe dust/fume/gas/mist/vapours/spray. Get medical advice/attention if you feel unwell. Dispose of contents and container in accordance with all local, regional, national and international regulations.

This product is physiologically inert in its massive form. However, user-generated dust and/or fumes may pose a physiological hazard if inhaled or ingested. Avoid inhalation of metal dusts and fumes. May cause an influenza-like illness. Avoid skin and eye contact with dusts to prevent mechanical irritation.

User-generated dust is easily ignited and difficult to extinguish.

Not a fire hazard unless in particle form. Suspensions of aluminum dust in air may pose a severe explosion hazard. Explosion/fire hazards may be present when (See sections 5, 7, and 10 for additional information):

- Dust and fines are dispersed in air
- Chips, dust or fines are in contact with water.
- Dust and fines are in contact with certain metal oxides (e.g., rust, copper oxide).
- Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide)

Dust and fumes from processing can cause irritation to the eyes, skin and upper respiratory tract.

Additional health effects from elevated temperature processing (e.g. welding, melting); Acute overexposures can cause metal fume fever (nausea, fever, chills, shortness of breath and malaise) and the accumulation of fluid in the lungs (pulmonary edema). Chronic overexposures can cause asthma, benign lung disease (siderosis) and lung cancer.

Carcinogenicity and Reproductive Hazard:

Product as shipped does not present any cancer or reproductive hazards.

Dust from mechanical processing does not present any cancer hazards. It can present a reproductive hazard (manganese).

Dust and fumes from welding or elevated temperature processing can present a reproductive hazard (manganese compounds, inorganic).

Potential environmental effects:

Not expected to be harmful to aquatic organisms.

2.4. Unknown acute toxicity (GHS-US)

Not applicable

### SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Chemical Name*	Product Identifier	% (w/w)	Classification (GHS-US)
Aluminum	(CAS No) 7429-90-5	> 95	Comb. Dust Flam. Sol. 1, H228 Water-react. 2, H261
Zinc	(CAS No) 7440-66-6	< 1.6	Comb. Dust Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Manganese	(CAS No) 7439-96-5	< 1.5	Comb. Dust
Silicon	(CAS No) 7440-21-3	< 1	Comb. Dust
Iron	(CAS No) 7439-89-6	< 1	Comb. Dust Flam. Sol. 1, H228 Self-heat. 1, H251
Magnesium	(CAS No) 7439-95-4	< 0.6	Flam. Sol. 1, H228 Self-heat. 2, H252 Water-react. 2, H261
Copper	(CAS No) 7440-50-8	< 0.3	Aquatic Acute 1, H400 Aquatic Chronic 2, H411
Titanium	(CAS No) 7440-32-6	< 0.1	Flam. Sol. 1, H228
Surface lubricants	Various	< 1	

### SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation

: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact

: If irritation occurs, flush skin with plenty of water. Get medical attention if irritation persists. Burns caused by molten material must be treated clinically.

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First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.

First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory tract irritation. Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.

Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. Risk of thermal burns on contact with molten product.

Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

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

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : Do not use water on molten metal as explosion hazard could result.

### 5.2. Special hazards arising from the substance or mixture

Fire Hazard: 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.

- Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions.
- Chips, fines and dust in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces.
- Dust and fines in contact with certain metal oxides (e.g. rust, copper oxide). A thermite reaction, with considerable heat generation, can be initiated by a weak ignition source.
- Molten metal in contact with water/moisture or certain metal oxides (e.g. rust, copper oxide). Moisture entrapped by molten metal can be explosive. Contact of molten aluminum with certain metal oxides can initiate a thermite reaction. Finely divided metals (e.g. powders or wire) may have enough surface oxide to produce thermite reactions or explosions.

Explosion Hazard: Product as shipped is not 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. Do not disturb the material until completely cool.

Firefighting Instructions: Do not breathe fumes from fires or vapors 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: Carbon oxides (CO, CO<sub>2</sub>). Metal oxides. Hydrocarbons.

## SECTION 6: Accidental release measures

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

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

### 6.2. Methods and material for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Minimize dust generation. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation. Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters

### 6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

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Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/ spray. Do not swallow. Minimize generation of dust. Good housekeeping is important to prevent accumulation of dust. When using do not eat, drink or smoke.

Hygiene measures : Wash hands before eating, drinking, or smoking. Launder contaminated clothing before reuse.

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

Storage conditions : Keep out of the reach of children. Keep container tightly closed.

### 7.3. Specific end use(s)

Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Aluminum (7429-90-5)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)

Silicon (7440-21-3)		
ACGIH	Not applicable	
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)

Iron (7439-89-6)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
OSHA	OSHA TWA	10 mg/m <sup>3</sup>

Manganese (7439-96-5)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (respirable fraction) 0.1 mg/m <sup>3</sup> (inhalable fraction)
OSHA	OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (fume)

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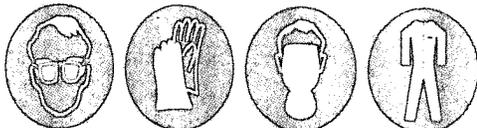
according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

### 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 creating or spreading dust. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed to be explosion proof and 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 with side shields, Protective goggles. Gloves. Protective clothing. Insufficient ventilation: wear respiratory protection

Protective clothing.



**Skin and Body Protection:** With molten material wear fire/flame resistant/retardant clothing, heat resistant gloves, neck shroud, spats, safety boots. Wear heat resistant gloves when handling heated material.

Avoid sharp edges or heated metal. Wear long sleeved clothing or cut resistant sleeves, cut resistant impervious gloves.

**Eye and Face Protection:** Safety glasses with side shields. Wear a face shield when working with molten material. For processes generating dust or fine particulate wear dust resistant safety goggles.

**Respiratory Protection:** Use a NIOSH-approved respirator or self-contained breathing apparatus whenever exposure may exceed established Occupational Exposure Limits. Wear approved mask.

**Environmental Exposure Controls:** Do not allow the product to be released into the environment. No special environmental precautions required.

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

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Metallic
Colour	: Silver
Odour	: Odourless
Odour threshold	: No data available
pH	: 6.8 - 7.3 (10% solution)
Melting point	: Alloy Dependent ranges are 1164°F and 1220°F
Freezing point	: Alloy Dependent ranges are <1164°F
Boiling point	: 4478 °F
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: No data available
Relative density	: 2.65 - 2.70
Relative vapour density at 20 °C	: No data available
Solubility	: Insoluble
Partition coefficient: n-octanol/water	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No dangerous reaction known under conditions of normal use.

### 10.2. Chemical stability

Stable under normal storage conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

### 10.4. Conditions to avoid

Protect from moisture and water. Incompatible materials.

In the case of a coil of foil being immersed in water, the water can penetrate between the laps of foil creating a vigorous oxidation reaction producing hydrogen gas and heat. When the coils are removed from the water a rapid temperature increase can occur causing a steam explosion resulting in the rupture of the coil, in addition hydrogen gas can reach concentrations over the explosive limit (4.1%), which can also cause explosive rupture of the coil. Partial immersion or immersion for only a short time can create the same catastrophic result.

Wetted coils showing evidence of this reaction should be isolated and allowed to cool for at least 3 days. Wetted coils should not be re-melted under any circumstance until completely dry.

Chips, fines and dust can also react with moisture and water to generate heat and explosive, flammable hydrogen gas. Molten metal can react violently or explosively with moisture and water.

Elevated temperatures can also increase the oxidation rate of fine particles causing heat generation.

### 10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers

### 10.6. Hazardous decomposition products

Reaction with water, acids and bases generates flammable and potentially explosive hydrogen gas.

Under conditions of fire this product may produce metallic oxides, (iron, copper, aluminum...)

Combustion of the coatings can generate Carbon monoxide, Carbon dioxide, partially oxidized hydrocarbons. Hazardous polymerization does not occur.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified.

<b>Aluminum Alloy</b>	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	No data available
LC50 inhalation rat	No data available
<b>Aluminum (7429-90-5)</b>	
LD50 oral rat	> 10000 mg/kg
<b>Silicon (7440-21-3)</b>	
LD50 oral rat	3160 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
<b>Iron (7439-89-6)</b>	
LD50 oral rat	> 5000 mg/kg
<b>Manganese (7439-96-5)</b>	
LD50 oral rat	9 g/kg
LC50 inhalation rat	> 5.14 mg/l/4h

Skin corrosion/irritation	: Based on available data, the classification criteria are not met.
Serious eye damage/irritation	: Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	: May cause damage to organs through prolonged or repeated exposure.

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Aspiration hazard

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

Symptoms/injuries after inhalation

: May cause respiratory tract irritation. Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.

Symptoms/injuries after skin contact

: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. Risk of thermal burns on contact with molten product.

Symptoms/injuries after eye contact

: May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion

: May be harmful if swallowed. May cause stomach distress, nausea or vomiting.

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### SECTION 12: Ecological information

12.1. Toxicity  
Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

<b>Aluminum Alloy</b>	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

<b>Aluminum Alloy</b>	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

### SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. Recover and recycle product if possible.

Additional information : Recycle the material as far as possible.  
Ecology – Waste Materials : Avoid release to the environment.

### SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

### SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

<b>Aluminum (7429-90-5)</b>	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 % (dust or fume only)
<b>Manganese (7439-96-5)</b>	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	1.0 %

15.2. US State regulations

<b>Aluminum (7429-90-5)</b>
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
<b>Silicon (7440-21-3)</b>
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
<b>Copper (7440-50-8)</b>

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

### Magnesium (7439-95-4)

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

### Manganese (7439-96-5)

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

### Titanium (7440-32-6)

U.S. - New Jersey - Right to Know Hazardous Substance List

### Zinc (7440-66-6)

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

## SECTION 16: Other information

Date of issue : 06/01/2015  
Other information : None.

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