



# Alupanel Safety Sheet

## 1. Chemical Product

Chemical Formula: Mixture

Product Use: Architectural panels, speciality applications.

## 2. Composition / Information on Ingredients

CAS	Component	Percent
<b>Aluminium Face Sheets</b>		
7429-90-5	Aluminium	>92
7439-95-4	Magnesium	<5
7439-96-5	Manganese	<1.5
<b>Polymeric Core</b>		
Proprietary	Thermoplastic Polymer	<60
Proprietary	Fire Retardant	<25
Proprietary	Aramid Polymer	<7
<b>Coatings</b>		
Not Available	Chromium Compounds	5-10
Not Available	Nickel Compounds	5-10
Not Available	Antimony Compounds	2-10
7631-86-9	Silicon dioxide, amorphous	1-5
1333-86-4	Carbon black	1-5
Not Available	Cobalt Compounds	1-5
Not Available	Copper Compounds	1-5
13463-67-7	Titanium Dioxide	<2
Not Available	Lead compounds including lead chromate	0-1

## 3. Hazard Identification

Solid, panels. Various colours. Odourless. Non-combustible as supplied. Small chips, fine turnings and dust from processing may be readily ignitable.

Explosion/fire hazards may be present when -

- \* Dust or fines are dispersed in the air.
- \* Chips, dust or fines are in contact with water.
- \* Molten metal is in contact with water/moisture or certain metal oxides (e.g. rust).

Dust and fume from processing can cause irritation of eyes, skin and upper respiratory tract. Contact with molten polymer can cause thermal burns. Combustion of the coatings can generate toxic and irritating gases.



## 4. Potential Health Effects

The following health effects are not likely to occur unless sawing or cutting generates dust or unless polymer is heated to melting.

Eyes: Can cause irritation.

Skin: Can cause irritation. Contact with molten polymer can cause thermal burns.

Inhalation: Can cause irritation of upper respiratory tract and other health effects listed below. Cancer and reproductive hazard.

### Health Effects of Ingredients

**Aluminium dust, fines and fumes** Low health risk by inhalation. Generally considered to be biologically inert (Milling, cutting, grinding).

**Manganese dust or fumes** Chronic overexposures: Can cause inflammation of the lung tissue, scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease and reproductive harm in males.

**Titanium dioxide** can cause irritation of eyes and respiratory tract. Chronic overexposures: Can cause chronic bronchitis. Considering the physical and chemical properties of aramid aluminium laminates and the fact that Kevlar aramid fibre products in normal use represent minimal risk to human health, health hazards from fibre exposures secondary to handling aramid laminates is not expected to pose a significant risk to users.

**Cobalt compounds** Can cause irritation of eyes, skin and respiratory tract. Skin contact: Can cause allergic reactions. Acute and chronic overexposures: Can cause respiratory sensitization, asthma, kidney damage and damage to the heart muscle (cardiomyopathy).

**Antimony compounds** Can cause irritation of eyes, skin and mucous membranes. Chronic overexposures: Can cause dermatitis, perforation of the nasal septum, weight loss, hair loss, chemical pneumonia, liver damage and kidney damage. Ingestion: Can cause abdominal cramps, diarrhoea, dizziness, abnormal heart rhythm (arrhythmia) and death.

**Copper compounds** Can cause irritation of eyes, mucous membranes, skin and respiratory tract. Chronic overexposures: Can cause reduction in the number of red blood cells (anaemia), skin abnormalities (pigmentation changes) and hair discoloration.

**Nickel compounds** Can cause irritation of eyes, skin and respiratory tract. Skin contact: Can cause sensitisation and allergic contact dermatitis. Chronic overexposures: Can cause perforation of the nasal septum, inflammation of the nasal passages (sinusitis), respiratory sensitization and asthma. Associated with lung cancer, cancer of the vocal cords and nasal cancer. IARC/NTP: Listed as "known to be a human carcinogen" by the NTP. Listed as carcinogenic to humans by IARC (Group 1)\*.

**Chromium (III) compounds** Can cause irritation of eyes, skin (III) and respiratory tract. IARC/NTP: Not classifiable as to their carcinogenicity to humans by IARC.

## 5. First Aid Measures

### First Aid: Eyes

Dust from processing: Flush eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

### First Aid: Skin

Dust from processing: Wash skin with soap and water for at least 15 minutes. Consult a physician if irritation persists. Molten polymer: If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel material from skin. Get medical treatment for thermal burns.

### First Aid: Inhalation

Dust from processing: Remove to fresh air. If unconscious or severely injured, check for clear airway, breathing and presence of pulse. Perform CPR if there is no pulse or respiration. Consult a physician.



## 6. Fighting Measures

### Flammable/Combustible Properties

This product does not present fire or explosion hazards as shipped. Small chips, turnings, dust and fines from processing may be readily ignitable.

### Fire/Explosion

May be a potential hazard under the following conditions:

- \* Dust or fines dispersed in the air can be explosive. Even a minor dust cloud can explode violently.
- \* Chips, dust or fines in contact with water can generate flammable/explosive hydrogen gas. Hydrogen gas could present an explosion hazard in confined or poorly ventilated spaces.
- \* Dust or fines in contact with certain metal oxides (e.g., rust). A thermite reaction, with considerable heat generation, can be initiated by a weak ignition source.
- \* Molten metal in contact with water/moisture or other metal oxides (e.g., rust, copper oxide). Moisture entrapped by molten metal can be explosive. Contact of molten aluminium with other metal oxides can initiate a thermite reaction. Finely divided metals (e.g., powders or wire) may have enough surface oxide to produce thermite reactions/explosions.

### Extinguishing Media

Use Class D extinguishing agents on dusts, fines or molten metal. Use coarse water spray on chips and turnings.

### Unsuitable Extinguishing Media

DO NOT USE:

- \* Halogenated agents on small chips, dusts or fines.
- \* Water around molten metal.

These agents will react with the burning material.

### Fire Fighting Equipment/Instructions

Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

## 7. Accidental Release Measures

### Small/Large Spill

Collect scrap for recycling. If molten: Contain the flow using dry sand or salt flux as a dam. Do not use shovels or hand tools to halt the flow of molten aluminium. Allow the spill to cool before re-melting as scrap.

## 8. Handling & Storage

### Handling/Storage

Avoid generating dust. Avoid contact with sharp edges or heated material. Hot and cold aluminium are not visually different. Hot aluminium does not necessarily glow red.

### Requirements for Processes Which Generate Dusts or Fumes

If processing of these products includes operations where dust or extremely fine particulate is generated, obtain and follow the safety procedures and equipment guides contained in Aluminium Association Bulletin F-1 and National Fire Protection Association (NFPA) brochures listed in Section 16. Cover and reseal partially empty containers. Use non-sparking handling equipment. Provide grounding and bonding where necessary to prevent accumulation of static charges during dust handling and transfer operations. (See Section 15).

Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used. Dust collection systems must be dedicated to aluminium dust only and should be clearly labelled as such. Do not co-mingle fines of aluminium with fines of iron, iron oxide (rust) or other metal oxides. Do not allow chips, fines or dust to contact water, particularly in enclosed areas. Avoid all ignition sources. Good housekeeping practices must be maintained.



## Requirements for Re-melting of Scrap Material and/or Ingot

Molten metal and water can be an explosive combination. The risk is greatest when there is sufficient molten metal to entrap or seal off the water. Water and other forms of contamination on or contained in scrap are known to have caused explosions in melting operations. While the products may have minimal surface roughness and internal voids, there remains the possibility of moisture contamination or entrapment. If confined, even a few drops of water can lead to violent explosions. All tooling and containers which come in contact with molten metal must be preheated or specially coated and rust free. Moulds and ladles must be preheated or oiled prior to casting. Any surfaces that may contact molten metal (e.g., concrete) should be specially coated.

Drops of molten metal in water (e.g. from plasma arc cutting), while not normally an explosion hazard; can generate enough flammable hydrogen gas to present an explosion hazard. Vigorous circulation of the water and removal of the particles minimize the hazards.

During melting operations, the following minimum guidelines should be observed:

- \* Inspect all materials prior to furnace charging and completely remove surface contamination such as water, ice, snow, deposits of grease and oil or other surface contamination resulting from weather exposure, shipment, or storage.
- \* Store materials in dry, heated areas with any cracks or cavities pointed downwards.
- \* Preheat and dry large or heavy items adequately before charging into a furnace containing molten metal. This is typically done by use of a drying oven or homogenizing furnace. The drying cycle should bring the internal metal temperature of the coldest item of the batch to 400°F and then hold at that temperature for 6 hours.

## 9. Exposure Controls & Personal Protection

### Engineering Controls

If dust is generated through processing: Use with adequate explosion-proof ventilation to meet the limits listed in Section 8, Exposure Guidelines.

### Personal Protective Equipment

#### Respiratory Protection

If dust is generated through processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8, Exposure Guidelines. Suggested respiratory protection: N100.

**Eye Protection:** Wear safety glasses/goggles to avoid eye injury.

**Skin Protection:** Wear appropriate gloves to avoid any skin injury.

**General:** Sampling to establish lead exposures is advised where exposures to airborne particulate or fumes are possible. Consult OSHA Lead Standard 29 CFR 1910.1025 for specific health/industrial hygiene precautions and requirements to follow when handling lead compounds. Personnel who handle and work with molten polymer should utilize primary protective clothing like polycarbonate face shields, fire resistant tapper's jackets, neck shades (snoods), leggings, spats and similar equipment to prevent burn injuries. In addition to primary protection, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal. Synthetic materials should never be worn even as secondary clothing (undergarments).

## 10. Physical & Chemical Properties

**Physical State:** Solid panels  
**Boiling Point:** Not applicable

**Vapor Pressure:** Not applicable  
**Solubility in Water:** None  
**Density:** 1.10-2.27g/cm<sup>3</sup>  
**Odor:** Odorless  
**Octanol-Water Coefficient:** Not applicable

**Appearance:** Various colors  
**Melting Point:** Aluminum: 900-1200°F (482-649°C); Polymer  
~220°F (~104°C)

**Vapor Density:** Not applicable  
**Specific Gravity:** See Density  
**pH Level:** Not applicable  
**Odor Threshold:** Not applicable



## 11. Toxicological Information

### A: General Product Information

No information available for product.

### B: Component Analysis - LD50/LC50

<b>Magnesium (7439-95-4):</b>	Oral LD50 Rat: 230 mg/kg
<b>Manganese (7439-96-5):</b>	Oral LD50 Rat: 9 g/kg
<b>Thermoplastic Polymer (Proprietary):</b>	Inhalation LC50 Mouse: 12 g/m <sup>3</sup> /30M
<b>Fire Retardant (Proprietary):</b>	Oral LD50 Rat: >5000 mg/kg
<b>Silicon dioxide, amorphous (7631-86-9):</b>	Oral LD50 Rat: >5000 mg/kg; Dermal LD50 Rabbit: >2000 mg/kg
<b>Carbon black (1333-86-4):</b>	Oral LD50 Rat: >15400 mg/kg; Dermal LD50 Rabbit: >3 g/kg
<b>Cobalt compounds (Not Available):</b>	Oral LD50 Rat: >3000 mg/kg
<b>Titanium dioxide (13463-67-7):</b>	Oral LD50 Rat: >10000 mg/kg
<b>Lead compounds including lead chromate:</b>	Oral LD50 Rat: >5000 mg/kg
<b>Antimony compounds (Not Available):</b>	Oral LD50 Rat: >10000 mg/kg

## 12. Disposal Information

### Disposal Instructions

Reuse or recycle material whenever possible. For disposal, characterize material in accordance with guidance under "US EPA Waste Number & Descriptions" and dispose of at an industrial landfill or other facility permitted to manage such material.

### US EPA Waste Number & Descriptions

#### A: General Product Information

RCRA Status: Must be determined at time material is disposed. If material is disposed as waste, it must be characterised under RCRA according to 40 CFR, Part 261, or state equivalent in the U.S.

#### B: Component Waste Numbers

RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalents in the U.S.