

MATERIAL SAFETY DATA SHEET

Alfredex Plate

Fire Resistant & Non-Combustible Cladding

SECTION 1: PRODUCT IDENTIFICATION

A. Product Name	Alfredex Plate
B. Recommended Use	Building Wall Cladding Material
C. Restriction on Use	None
D. Manufacturer/Importer/Distributor	Alfredex, LLC 943 Gainesville Hwy. Bldg. 100-4000 Buford, GA 30518 USA +1.470.589.7449
E. Emergency Phone Number	Chemtrec 1-800-424-9300
F. Website	www.alfredexusa.com
G. Initial Release Date	19-April-2019
H. Revision Date	01-July-2020
I. Version Number	2.0

SECTION 2: HAZARD IDENTIFICATION

A. Classification

Alfredex Plate is defined under OSHA Hazard Communications standard 29 CFR 1910.1200 as an "article". As such, it is a manufactured item other than a fluid or particle, formed to a specific design during manufacture with end functions dependent in whole or in part upon its' shape or design use during end use, and which under normal conditions of use does not release, or otherwise result in exposure to hazardous chemicals, nor pose a physical hazard or health risk to employees. Unless indicated otherwise, all classification information contained in this document regarding potential health, fire, or explosion hazards is in reference to hazardous elements that may be released during processing the product including, but not limited to, dust, fumes, chips, and fines.

Specific target organ toxicity (repeated exposure): Category 2

Chronic aquatic environment hazard: Category 1

B. GHS Label Elements Symbols



Warning

H302 Harmful if swallowed.

C. Signal Word Hazard Statement

H360 May damage fertility or the unborn child.

H373 May cause damage to organs.

H411 Toxic to aquatic life with long lasting effects.

C. Precautionary Statement

- Prevention	P201	Obtain special instructions before use.
	P202	DO not handle until all safety precautions have been read and understood.
	P210	Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
	P222	Do not allow contact with air.
	P231 + P232	Handle under inert gas. Protect from moisture.
	P240	Ground/bond container and receiving equipment.
	P241	Use explosion-proof electrical/ventilating/lighting/... /equipment.
	P260	Do not breathe dust/fume/gas/mist/vapors/spray.
	P264	Wash... Thoroughly after handling.
	P270	Do not eat, drink, or smoke when using this product.
	P271	Use only outdoors or in a well-ventilated area.
	P273	Avoid release to the environment.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
- Response	P308 + P313	IF exposed or concerned: Get medical advice/attention.
	P312	Call a POISON CENTER/doctor/... /if you feel unwell.
	P314	Get medical advice/attention if you feel unwell.
	P321	Specific treatment.
	P330	Rinse mouth.
	P335 + P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
	P370 + P378	In case of fire: Use... To extinguish.
- Storage	P391	Collect spillage.
	P402 P407	Store in a dry place. Maintain air gap between stacks/pallets.
- Disposal	P501	Dispose of contents/container in accordance with local regulation.

D. Hazards Not Otherwise Classified (NEPA)

Copper	
Health	2
Fire	Not Available
Reactivity	0
Manganese	
Health	0
Fire	Not Available
Reactivity	1
Silicon	
Health	Not Available
Fire	2
Reactivity	Not Available

Aluminum	
Health	0
Fire	Not Available
Reactivity	1
Iron	
Health	2
Fire	Not Available
Reactivity	Not Available
Zinc	
Health	0
Fire	Not Available
Reactivity	1

SECTION 3: COMPOSITE/INFORMATION ON INGREDIENTS

Components	CAS Number	Percentages %
Aluminum	7429-90-5	97.49 max
Copper	7440-50-8	0.20 max
Manganese	7439-96-5	1.50 max
Iron	7439-89-6	0.70 max
Silicon	7440-21-3	0.60 max
Zinc	7440-66-6	0.10 max
Others	-	0.06 max

This product is a solidified product, which is not exposed to chemicals contained in the product. However, it may be partially exposed in the molten condition such as cutting or melting.

SECTION 4: FIRST-AID MEASURES

- | | |
|--|---|
| A. Eye Contact | Dust from processing. Rinse eyes with water or saline solution for at least 15 minutes. Seek medical attention from a physician. |
| B. Skin Contact | Dust from processing. Wash skin with soap and water for at least 20 minutes while removing contaminated clothing and shoes. Seek medical attention from a physician. In the case of burns, immediately cool the affected area for as long as possible by cold water, and do not remove any clothing adhering to the skin. |
| C. Inhalation | Dust from processing. Move to fresh air. Seek medical attention from a physician. |
| D. Ingestion | Not inspected due to composition and form of product. If dust or fines are ingested, rinse mouth with water in case of more ingestion of dust or fines. Seek medical attention from a physician. |
| E. Most Important Symptoms & Effects | Prolonged exposure to dust and fumes may aggravate pre-existing chronic conditions of the skin or respiratory system. |
| F. Indication if Immediate Medical Attention and Special Treatment Needed. | Notify medical personnel of any situation and avoid overexposure to irritants. |

SECTION 5: FIRE FIGHTING MEASURES

- | | |
|---------------------------------|--|
| A. Suitable Extinguishing Media | Use Class D extinguishing agents on fines or molten metal. Do not use halogenated extinguishing agents on small chips, fines, or dust. |
| B. Specific Hazards | Dust from Processing. Wash skin with soap and water for at least 20 minutes while removing contaminated clothing and shoes. Seek medical attention from a physician. When burned, dust may emit corrosive or toxic smoke, fumes, or vapors may be emitted. Substances are not easily ignited; they may be burned via direct flame application. Substances may be explosively decomposed in case of fire or over-heating. |

C. Hazardous Combustion

Dust or fines dispersed in the air can be explosive. Even minor dust clouds are potentially dangerous. Chips, dust or fines in contact with water can generate flammable/explosive hydrogen gas. Hydrogen gas in a confined space or poorly ventilated space could present an explosion hazard. Fines and dust in contact with certain metal oxides (i.e. rust). Thermite reactions can be initiated easily by weak ignition sources. Molten metal in contact with water/moisture or other metal oxides. Moisture entrapped by molten metal can be explosive. Contact of molten aluminum with other metal oxides can initiate a thermite reaction.

D. Special PPE and Precautions for Firefighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

A. Personal & Environmental Precautions

Avoid contact with sharp edges or heated metal. Wear protective gloves. No special environmental precautions are required.

B. Method and Materials for Containment and Cleaning

Clean releases or dust by sweeping the area and depositing in a closed container. Take measures to block dust from reaching surface water or grassy areas.

SECTION 7: HANDLING AND STORAGE

A. Precautions for Safe Handling

Avoid generating dust. Avoid contact with sharp edges or heated metal. There is no visual difference between hot and cold aluminum. Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used, unless specifically approved for use with flammable/explosive dusts. Dust collection systems must be dedicated to aluminum dust only and should be clearly labeled as such. Do not co-mingle fines of aluminum with fines of iron, iron oxide (rust) or other metal oxides. Avoid all ignition sources and maintain good housekeeping practices. Do not use compressed air to remove material from floors and other surfaces.

B. Conditions for Safe Storage

No special storage precautions noted.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

A. OSHA Permissible Exposure Limit

Aluminum	15mg/m ³ (Total), 10mg/m ³ (Respirable)
Manganese	5mg/m ³ (Respirable Fume)

B. Appropriate Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Exposure Limits. If engineering controls fail to mitigate exposure to limits listed, use NIOSH approved respiratory protection.

C. Individual Protection Measures (PPE)

- Eye & Face Protection
Wear primary eye protection such as tight-fitting safety goggles with a secondary protection face shield.
- Respiratory Protection
Use an approved respirator designed for the specific hazards where concentrations exceed exposure limits.
- Skin & Body Protection
Wear cut resistant gloves and avoid contact with sharp edged objects and materials.
- Thermal Protection
When handling heated materials, wear gloves and proper clothing to cover exposed areas and protect against thermal burns.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	Solid, Various Colors	
B. Odor	Odorless	
C. Odor Threshold	Not Applicable	
D. pH	Not Applicable	
E. Melting Point / Freezing Point	Aluminum	482°C - 660°C (900°F - 1221°F)
F. Flash Point	Not Applicable	
G. Evaporation Rate	Not Applicable	
H. Flammability (Solid, Gas)	Not Applicable	
I. Upper / Lower Flammability or Explosive Limits	Not Applicable	
J. Solubility	Insoluble	
K. Vapor Density	Not Applicable	
L. Specific Gravity	2.7g/cm ³	
M. Partition Coefficient: n-Octanol/water	Not Applicable	
N. Auto Ignition Temperature	590°C (1,094°F)	
O. Decomposition Temperature	Not Applicable	
P. Viscosity	Not Applicable	
Q. Molecular Weight	Not Applicable	

SECTION 10: STABILITY AND REACTIVITY

- A. Chemical Stability
Stable under recommended storage and handling conditions.
- B. Possibility of Hazardous Reactivity and Conditions to Avoid
Dust formation. Heat, flames and sparks. Protect from water. Aluminum fines are attached by strong acids and alkalis and by some halogenated organic compounds especially at elevated temperatures. Operations generating aluminum fines may produce hydrogen gas when exposed to moisture. Hydrogen gas is highly flammable and can accumulate in poorly ventilated areas. Liberates flammable hydrogen gas on contact with water, alcohols, acidic or basic materials, and metals or metallic compounds.

- C. Incompatible Materials

Acids. Alkalis. Water. Halogenated compounds. Metal oxides.
Iron powder and water: may cause an explosive reaction forming hydrogen gas when heated above 800°C (1470°F).
- D. Hazardous Decomposition Products

Nickel oxides. Cadmium compounds. Fumes of aluminum or aluminum oxide.
Welding of aluminum alloys may generate carbon monoxide, carbon dioxide, ozone, and nitrogen oxides. Lead oxides. Lead and chromium compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

- | | |
|-----------|---|
| Copper | LD50 481mg/kg Rat (OECD TG 401, GLP) |
| Aluminum | LD50 > 15900mg/kg Rat (OECD TG 401) |
| Manganese | LD50 > 2000mg/kg Rat (OECD TG 420, GLP) |
| Iron | LD50 98.6mg/kg Rat (OECD TG 401, male) |
| Silicon | LD50 3160mg/kg Rat |
| Zinc | LD50 > 2000mg/kg Rat (OECD TG 420, GLP) |
- A. Acute Toxicity
 - B. Carcinogenicity

Not classified as a carcinogen. Trace elements used in the paint coatings for this product may be known cancer causing agents.
 - C. Inhalation

Airborne particles of aluminum and/or product materials may irritate the eyes and respiratory tract.
 - D. Skin Corrosion Property/Stimulativeness

The product is not known to cause human skin or respiratory sensitization. Contact with dust can cause mechanical irritation or drying of the skin.
 - E. Ingestion

Not Applicable
 - F. Germ Cell Mutagenicity

Aluminum - The in-vitro DNA damage test shows that the negative similar substance of AlCl₃ obtained from Sigma when there is no metabolic activity. The chromosome abnormality test by using the myelocyte for the mammal shows that the negative similar substance or AlCl₃ obtained from Sigma OECD TG 475 when there is no metabolic activity.
 - G. Reproductive Toxicity

Product not classified and dust from processing does not present any reproductive hazards. Elevated temperature processing with manganese compounds, such as welding, can present reproductive hazards for males.

H. Specific Organ Toxicity

Single Exposure, Product - the classification criteria are not met. For dusts, may cause damage to organs (kidneys, respiratory system).

Repeated Exposure - May cause damage to organs through prolonged exposure (respiratory system). May cause allergic reactions in very susceptible persons, cause chronic effects, cause skin irritation and/or dermatitis and sensitization of susceptible persons. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects. Elevated temperature processing such as welding and plasma arc cutting may release hazardous fumes. Overexposure to metal fumes may cause pulmonary edema (fluid in the lungs) and methemoglobinemia. May also cause pulmonary fibrosis and lung cancer. Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Inorganic lead compounds can cause developmental damage.

I. Eyes Critical Damage/Stimulativeness

Dust particles, chips or fines contact with the eyes can lead to mechanical irritation.

SECTION 12: ECOLOGICAL INFORMATION

A. Ecotoxicity (Fish)

Not expected to be harmful to aquatic organisms.

Copper	LC50 0.286mg/L 96hr Oncorhynchus mykiss (LC50 = 0.28640% sewage treatment plant effluent, 0.164 river water mg/L 96hr)
Manganese	LC50 > 3.6mg/L 96hr Oncorhynchus mykiss (OECD TG 203, GLP)
Zinc	LC50 0.439mg/L 96hr others (test specie: Cottus bairdii)

B. Persistence and Degradability

The product contains inorganic compounds which are not biodegradable.

C. Bio-accumulative Potential

The product is not bioaccumulative.

D. Soil Mobility

Not considered mobile

Copper	Fish	Oncorhynchus mykiss: NOEC = 11.4µg/L 45d
	Crustacean	Ceriodaphnia sp.: NOEC = 122µg/L mortality, 31.6µg/L reproduction OECD TG 21
	Algae	Chlamydomonas reinhardtii: NOEC = 22µg/L growth rate 10d OECD TG 201
Aluminum	Crustacean	Daphnia magna: NOEC = 0.076mg/L reproduction, 0.137µg/L immobilization 21d OECD TG 211, GLP
Manganese	Fish	Oncorhynchus mykiss: NOEC = 0.77mg/L 100d
	Crustacean	Ceriodaphnia dubia: NOEC = 1.7mg/L 8d OECD TG 211, GLP
	Algae	Ditylum brightwellii: EC50 = 1.5mg/L 5d
Zinc	Fish	Cottus bairdii: NOEC = 0.169 - 0.172mg/L 30d
	Crustacean	Daphnia magna: NOEC = 0.048 - 0.156mg/L 21d
	Bird	Ceramium tenuicore: NOEC = 7.2 - 18µg/L 7d

E. Other Adverse Effects

SECTION 13: DISPOSAL INFORMATION

Disposal must be in accordance with current applicable laws and regulations and material characteristics at time of disposal. Recover and reclaim or recycle, if practical. Aluminum in the form of particle may be reactive. Its hazardous characteristics, including fire and explosion, should be determined prior to disposal.

SECTION 14: TRANSPORTATION

A. UN Number	Product: Does not require regulation
B. UN Proper Shipping Name	Product: Does not require regulation
C. Transport Hazard Class	Product: Does not require regulation
D. Packing Group	Product: Does not require regulation
E. Environmental Hazards	Product: Does not require regulation

SECTION 15: REGULATORY INFORMATION

OSHA: NOT classified as hazardous under the criteria in 29 CFR 1910.1200, Hazard Communication.

U.S. SARA REPORTING REQUIREMENTS: The product components are not subject to the reporting requirements of Sections 302, and 304 of Title III of the Superfund Amendments and Reauthorization Act.

Section 313 (TRI) reporting: Aluminum (CAS 7429-90-5) > 80% by weight, Manganese (CAS 7439-96-5) < 4% by weight.

U.S. TSCA INVENTORY STATUS: The components of this product are listed in the TSCA Inventory.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): There may be elements present in the dust generated from the processing of this product, trace amounts, that are on the California Proposition 65 list. Warning! This product contains chemicals known to the State of California to cause cancer.

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are on the DSL Inventory, or are exempted from listing. CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA First Priorities Substance Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Not Applicable.

SECTION 16: OTHER INFORMATION

The information contained herein is believed to be accurate. It is not intended to constitute performance information related to this product. ALFREX, LLC MAKES NO WARRANTY OF ANY KIND, EXPRESS OR APPLIED, CONCERNING THE ACCURACY OF COMPLETENESS OF THE INFORMATION AND DATA HEREIN. THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY EXCLUDED. ALFREX, LLC has no responsibility or liability for any damage or injury resulting from abnormal use or from any failure to adhere to recommended procedures. Alfred, LLC will not be responsible for claims relating to any parties' use of or reliance on information and data contained herein regardless of whether it is claimed that the information is inaccurate, incomplete, or otherwise misleading.

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