



1. Identification

Product identifier Aluminum chloride (AlCl3)
Other means of identification
SDS number 1AP
Materion Code 1AP
CAS number 7446-70-0
Synonyms ALUMINIUM CHLORIDE * ALUMINIUM CHLORIDE (ANHYDROUS) * Aluminum chloride (AlCl3)

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Materion Advanced Chemicals Inc.
Address 407 N 13th Street
1316 W. St. Paul Avenue
Milwaukee, WI 53233
United States
Telephone 414.212.0290
E-mail advancedmaterials@materion.com
Contact person Laura Hamilton
Emergency phone number Chemtrec 800.424.9300

2. Hazard(s) identification

Physical hazards Not classified.
Health hazards Skin corrosion/irritation Category 1B
Serious eye damage/eye irritation Category 1
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Environmental hazards Not classified.
OSHA defined hazards Not classified.

Label elements



Signal word Danger
Hazard statement Causes serious eye damage. May cause respiratory irritation.
Precautionary statement
Prevention Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.
Response Wash contaminated clothing before reuse.
Storage Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC) Water reactive substance.
Supplemental information For further information, please contact the Product Stewardship Department at +1.800.862.4118.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Aluminum chloride	ALUMINIUM CHLORIDE ALUMINIUM CHLORIDE (ANHYDROUS) Aluminum chloride (AlCl ₃)	7446-70-0	100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.
Skin contact	Take off immediately all contaminated clothing. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Rinse skin with water/shower.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Continue rinsing.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting.
Most important symptoms/effects, acute and delayed	Prolonged exposure may cause chronic effects.
General information	Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Dry powder. Dry sand. Carbon dioxide (CO ₂). Dry chemical, soda ash, lime or DRY sand.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Wear suitable protective equipment.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Catches fire spontaneously if exposed to air. No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use only non-sparking tools. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Neutralize with lime or soda ash. Prevent entry into waterways, sewer, basements or confined areas. Large Spills: Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Small Spills: Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not allow contact with air. Open container carefully and only in a dry, oxygen-free or inert atmosphere. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. ACGIH Threshold Limit Values

Material	Type	Value	Form
Aluminum chloride (CAS 7446-70-0)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
Aluminum chloride (CAS 7446-70-0)	TWA	2 mg/m3

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

Material	Type	Value
Aluminum chloride (CAS 7446-70-0)	PEL	2 mg/m3

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear eye/face protection. Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form	Solid.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	378.68 °F (192.6 °C)
Initial boiling point and boiling range	360.86 °F (182.7 °C) 1002.4 hPa
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 0.0000001 kPa (77 °F (25 °C))
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	2.48 g/cm ³ estimated
Explosive properties	Not explosive.
Molecular formula	Al-Cl ₃
Molecular weight	133.34 g/mol
Oxidizing properties	Not oxidizing.
Specific gravity	2.48

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Exposure to air. Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials.
Incompatible materials	Air. None known.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system. Prolonged inhalation may be harmful.
Skin contact	Causes severe skin burns.
Eye contact	Causes severe eye burns. Causes serious eye damage.
Ingestion	Causes digestive tract burns. Harmful if swallowed. Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics	Narcosis. Behavioral changes. Decrease in motor functions. Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause respiratory irritation.
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Information on toxicological effects

Acute toxicity	Causes severe skin burns and eye damage. In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Harmful if swallowed. Harmful if swallowed.
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Product	Species	Test Results
Aluminum chloride (CAS 7446-70-0)		
<u>Acute</u>		
Oral		
LD50	Rat	370 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Causes severe skin burns and eye damage.
Serious eye damage/eye irritation	Causes severe eye burns. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Suspected of causing genetic defects.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	May cause damage to organs (respiratory system) through prolonged or repeated exposure.
Aspiration hazard	Based on available data, the classification criteria are not met.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
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Product	Species	Test Results
Aluminum chloride (CAS 7446-70-0)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Ceriodaphnia dubia) 1.5 mg/l, 48 hours
Fish	LC50	Atlantic salmon (Salmo salar) 0.444 - 0.676 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1726
UN proper shipping name	Aluminum chloride, anhydrous
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	II
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB8, IP2, IP4, T3, TP33
Packaging exceptions	154
Packaging non bulk	212
Packaging bulk	240

IATA

UN number	UN1726
UN proper shipping name	Aluminium chloride, anhydrous
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	No.

ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.

IMDG

UN number	UN1726
UN proper shipping name	ALUMINIUM CHLORIDE, ANHYDROUS
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations All components are on the U.S. EPA TSCA Inventory List.
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/SARA Hazardous Substances - Not applicable.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Pyrophoric (liquid or solid)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

16. Other information, including date of preparation or last revision

Issue date 10-24-2013

Revision date 10-15-2021

Version # 07

Disclaimer

Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.