



Inorganic Coagulant Solve 10GT

Material Safety Data Sheet

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COMPANY: WaterSolve, LLC, 4964 Starr St. S.E. Grand Rapids, MI 49546, USA
For Product information call 616-575-8693.

I. Product Identification

Product Name: **Solve 10GT**

Chemical Type: Aluminum Chloride Solution

Ingredient Name:	CAS#	% by weight	OSHA PEL/ACGIH TLV
Aluminum chloride	7446-70-0	10-30	2 mg/m ³ as Al

INGREDIENT	CASE NUMBER	PERCENTAGE
Water	7732-18-5	60-90
Aluminum chloride	7446-70-0	10-30
Hydrogen chloride	7647-01-0	0-10

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local Right-To-Know compliance and for other reasons.

OSHA Hazard Communication Standard: This product is considered hazardous under the OSHA Hazard Communication Standard.

All ingredients are listed on the TSCA Chemical Substance Inventory.

II. Hazards Identification

EMERGENCY OVERVIEW: An odorless clear water white to pale yellow liquid. Can cause irritation and/or burns to the skin and eyes. May be harmful if swallowed. Not flammable, but may release toxic vapors if decomposed in a fire.

EXPOSURE LIMITS: Not specifically regulated as toxic or hazardous by OSHA. The ACGIH TLV for soluble aluminum salts is 2 mg/m³ as AL (8hour time-weighted average).

Carcinogenicity: None of the components of this material are listed as a carcinogen by IARC, NTP, OSHA, or ACGIH.

Toxicology:

Skin: May cause irritation, may cause dermatitis after prolonged or repeated contact. Skin may dry or crack due to astringent nature of material. Repeated skin contact may lead to development of dermatitis.

Eye Contact: Eye contact results in severe irritation and painful burns of the eyes and eyelids. If material is not removed by copious irrigation with water at room temperature visual impairment or total loss of vision could result. May cause severe irritation and/or corneal damage (burns).

Ingestion: When aluminum chloride is swallowed it causes acute irritation and burns of the mucous membranes of the mouth, trachea, esophagus, and stomach. There may be difficulty in swallowing and breathing due to acidic and astringent nature of the material. May cause severe damage to mouth, esophagus and stomach.

Inhalation: Inhalation results in coughing, burning, of the nose and throat, and a choking sensation. Reactions are usually limited to inflammation and occasional ulceration of the mucosa. Inhalation of mist may irritate mucous membranes, nose, throat and lungs.

Delayed Effects: None known.

III. First Aid

Eye Contact: Do not rub. Immediately flush eyes gently for 15 minutes with plenty of water. Call a physician immediately.

Skin Contact: Flush skin with plenty of water, remove contaminated clothing; wash before reuse. Seek medical attention if redness and swelling of skin persists.

Inhalation: Remove person from exposure area to fresh air. If breathing has stopped, give artificial respiration, if breathing is difficult, give oxygen. Seek medical attention if needed.

Ingestion: Do not induce vomiting. If conscious, give large quantities of water or milk. Follow milk of magnesia or whites of eggs, beaten in water. Never give anything by mouth to unconscious individual. Seek immediate medical attention.

Advice to Physician: Treat symptomatically.

IV. Fire and Explosion Hazard Data

Flashpoint: N/A ²

Flashpoint Method: Not applicable

Autoignition Temperature: Not applicable

Upper Flame Limit (volume % in air): Not applicable

Lower Flame Limit (volume% in air): Not applicable

Flame Propagation Rate (solids): Not applicable

OSHA Flammability Class: Not applicable

Extinguishing Media: Will not burn; use materials appropriate for surrounding fire. If involved in a fire, use water. Water spray will probable reduce fumes and any irritating gases.

Fire Fighting Precautions: Wear Self-contained breathing apparatus (SCBA) and full protective equipment. Cool exposed containers with water spray. Do not splash any spilled material onto personnel.

Unusual Fire and Explosion Hazards:
When subjected to high temperatures prevalent in a fire aluminum chloride may decompose and release hydrochloric acid and possibly hydrogen. Hydrochloric acid is corrosive and extremely irritating to respiratory tract: self-contained breathing apparatus should be worn Hydrogen is flammable and potentially explosive, appropriate precautions should be taken. Hydrochloric acid fumes and generated when this product is heated.

Special fire fighting instructions: Cool exposed tanks with water.

V. **Accidental Release Measures/Waste Disposal**

IN CASE OF SPILL OR OTHER RELEASE:

(See section 8 for recommended personal protective equipment.) Review safety precautions before proceeding with cleanup. Use appropriate personal protection equipment. Neutralize spill with lime (calcium hydroxide), limestone (calcium carbonate), or soda ash (sodium carbonate). Caution: limestone, and soda ash will evolve CO₂: ventilation should be provided in enclosed areas. Dike area to contain spill. Neutralize spilled material with alkali such as soda ash. When using carbonates for neutralization, adequate precautions should be taken to minimize hazards from carbon dioxide gas generation. Disposal: Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine whether the substance should be classified as a hazardous waste at the time of disposal. This is due to the fact that product use, transformation, synthesis, mixtures, etc. may change the nature of the product. Collect liquid and/or residue and dispose of in accordance with applicable regulations.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

VI. **Storage and Handling**

NORMAL HANDLING: (See section 7 for recommended personal protective equipment.)

Avoid contact with skin, eyes and clothing. Do not breathe product mists. Use with adequate ventilation. Handle as material of moderate oral toxicity. Do not smoke or eat while handling. Use good housekeeping and personal hygiene. Wash thoroughly after handling

STORAGE RECOMMENDATIONS:

Store at moderate temperatures in a dry, well ventilated area. Protect from physical damage and from freezing. Keep containers tightly closed.

VII. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

Engineering Controls:

Provide local exhaust if fuming or misty conditions prevail. Natural ventilation is normally adequate in the absence of such conditions.

Personal Protection Equipment:

- Eye Protection: Chemical splash goggles and face shield. Eye wash station should be readily available.
- Skin Protection: Wear rubber gloves and apron, long sleeved shirts, trousers and boots. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid.
- Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic," may be useful in determining the suitability of various types of respirators.

Additional Recommendations:

To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product. Eyewash and safety showers are recommended. Adequate general ventilation should be provided to keep vapor and mists below exposure limits. Wear safety glasses with side shields. Wear a face shield if possibility of material splashing or spraying exists. Where there is possibility of skin contact, use the following appropriate: gloves, impervious to material, apron, boots, hood, pants, and jacket. Wear a NIOSH/OSHA approved respirator with a dust/mist cartridge if there is potential of exposure to mists in excess of applicable limits.

EXPOSURE GUIDLELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Aluminum chloride (as Aluminum)	2mg/m ³	2mg/m ³	None

OTHER EXPOSURE LIMITS FOR POTENTIAL DECOMPOSITION PRODUCTS:

None

VIII. Physical and Chemical Properties

Appearance:	Clear water white to slight yellow liquid
Physical state:	liquid
Molecular Weight:	133.5 (anhydrous AlCl ₃)
Chemical Formula:	AlCl ₃ in H ₂ O
Boiling point:	~230°F (110°C)
Melting Point:	5°F (-30 °C)
Freezing point:	-31 deg. F
Odor:	slightly acrid
Specific gravity: (water=1.0)	1.28 @ 25°C
Solubility in Water(weight%):	100
pH:	<1
Vapor Pressure:	<5mm Hg @35°C
Vapor Density (air=1.0):	Not applicable
Evaporation Rate:	Not determined
Compared To :	Not applicable
% Volatiles:	~50
Flash Point:	Not flammable

(Flash point method and additional flammability data are found in Section 4)

IX. STABILITY AND REACTIVITY

Normally Stable (conditions to Avoid)	Stable under normal conditions. High temperatures may cause the generation of hydrogen chloride gas.
Incompatibilities:	Alkalis and eater reactive materials which have exothermic reactions. Rapidly corrodes most metals; may generate flammable, potentially explosive hydrogen gas.
Hazardous Decomposition Products:	Hydrogen chloride gas is formed at elevated temperature.
Hazardous Polymerization:	Will not occur.

X. TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS:

Aluminum chloride:
LD 50 (oral – rat) =3450 mg/kg
LD50 (oral-mouse) = 1130mg/kg
LD50 (rabbit-skin) = >2 g/kg

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS:

Data not available.

OTHER DATA:

None

XI ECOLOGICAL INFORMATION

Data not available.

XII DIPOSAL CONSIDERATIONS

RCRA

Is the unused product a RCRA hazardous waste if discarded? YES
If yes, the RCRA ID number is : D002 (corrosive)

OTHER DIPOSAL CONSIDERATIONS:

If permitted by regulations, material may be neutralized with alkali.

The information offered in Section 13 is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and later the RCRA classification and the proper disposal method.

XIII TRANSPORT INFORMATION

US DOT HAZARD CLASS/PACKING GROUP:	8, PGIII
US DOT ID NUMBER:	UN2581
PROPER SHIPPING NAME:	Aluminum chloride, solution
DOT LABELS:	Corrosive
DOT PLACARDS:	Corrosive
TDG HAZARD CLASS/PACKING GROUP:	8, PGIII
TDG ID NUMBER:	UN2581
PORPER SHIPPING NAME:	Aluminum chloride, solution

SARA Title III Hazards:

Fire:	No
Reactivity:	No
Acute:	Yes
Chronic:	No
Sudden release of pressure:	No

<u>Hazards Information Data</u>	<u>NFPA</u>
Health	1
Flammability	0
Reactivity	1

For additional information on shipping regulations affecting this material, contact the information number Found in Section 1.

XIV REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA INVENTORY STATUS:	All ingredients listed on the TSCA Inventory
OTHER TSCA ISSUES:	None

This information is for the specific material described only and may not be valid if the material is used in combination with any other materials or in any process. The user is responsible to determine the completeness of the information and suitability for the user's own particular use. The knowledge and belief of WaterSolve, LLC, the information is accurate and reliable as of the date indicated but WaterSolve, LLC makes no express or implied warranty of merchantability for the material or the information. WaterSolve, LLC makes no express or implied warranty of fitness for a purpose for the material or for the information.