



Solve 10K

Material Safety Data Sheet

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **SOLVE 10K**
CHEMICAL FAMILY: Aluminum Chloride Solution
Molecular Formula: $AlCl_3$

COMPANY: **WaterSolve, LLC, 4964 Starr ST. SE, Grand Rapids, MI 49546, USA**
For Product information call **616-575-8693**.

EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call
CHEMTREC: 1-800-424-9300. Outside the USA and Canada call 703-527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA Regulated Components

Component	CAS NO.	%(w/w)	OSHA (PEL)	AGGIH (TWA)
Aluminum chloride	7446-70-026-30		2 mg/m ³ (as Al)	Aluminum salts, soluble
Hydrochloric Acid	7647-01-0	<1	7 mg/m ³ (ceiling)	2ppm (Ceiling) 5 ppm (Ceiling)

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance and Odor:

Color: clear
Appearance: liquid
Odor: pungent

STATEMENTS OF HAZARD

WARNING! CAUSES BURNS OF EYES AND SKIN

Potential Health effects

Effects of exposure: Refer to Section 11 for toxicology information on the regulated components of this product. Direct contact with this material may cause eye and skin burns. The acute oral (rat) LD50 is estimated to be >2000 mg/kg.

4. FIRST AID MEASURES

Inhalation Remove to fresh air. Obtain medical attention immediately if necessary.

Skin Contact: Do not reuse contaminated clothing without laundering. Wash immediately with plenty of water. Remove contaminated clothing and shoes without delay. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

Eye Contact: Rinse immediately with plenty of water for at least 15 minutes. Obtain medical attention immediately.

Ingestion: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.
General: If you feel unwell seek medical advice (show the label where possible).

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

The substance is not combustible. Use extinguishing media appropriate to the surrounding fire.

NOTE: Also see Section 10 – Stability and Reactivity

Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (exposure Controls/Personal Protection)

Special Hazards:

Keep containers cool by spraying with water if exposed to fire. During a fire, irritating/toxic and corrosive fumes may evolve. Decomposition releases may include hydrogen chlorides and aluminum- oxides.

Mechanical/Static Sensitivity Statements:

None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Restrict access until clean-up operations are complete. Wear appropriate Personal Protective Equipment per Section 8. Ensure trained personnel conduct clean up and wear Personal Protective Equipment per Section 8. Stop leak if possible. Avoid personal risk.

Spills, Leaks or Release:

- Restrict access to area until completion of clean up. Ensure trained personnel conduct clean up.
- Wear adequate personal protective equipment. DO NOT TOUCH SPILLED MATERIAL.
- Stop leak if possible without personal risk.
- Small spills: Absorb spill with clay or dry material or neutralize with lime, limestone or soda ash and collect in appropriate container for disposal. Neutralization with soda ash can generate carbon dioxide so additional ventilation may be necessary.
- Large spills: Prevent entry into sewers and confined areas. Dike if possible. Keep unnecessary people away, isolate hazard area and deny entry. Pump liquid material into appropriate vessels as possible or absorb spill with clay absorbents or non-reactive dry material and collect in appropriate container for disposal. Neutralize spill residuals carefully with lime, limestone, or soda ash and collect in suitable container for disposal. Flush area with water. This could generate carbon dioxide so additional ventilation may be necessary. Comply with Federal, Provincial/State and local regulations on reporting releases. Notify Authorities if release exceeds reportable quantity per Section 15.

7. HANDLING AND STORAGE

Handling

Precautionary Measures: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. People working with this chemical should be properly trained regarding its hazards and its safe use.

Special Handling Statements: Review the label, this MSDS and any other applicable information before use. Keep separated from incompatible substances. Observe all warnings and precautions listed for the product. Wear appropriate Personal; Protection Equipment. Inspect containers for damage or leaks before handling. Handle only with equipment, materials and supplies specified by their manufacturer as being compatible and appropriate for use with this product.

Storage Requirements: Prevent material from coming in contact with common metals. Material may be stored in tightly closed shipping containers, preferably the supplier container. Protect from heat, sunlight and damage. Keep dry. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do not use metal containers. Product should be used within one (1) year.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing.

Additional Advice:

Food, beverages and tobacco products should not be carried, stored or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	clear liquid, pungent odor
Boiling Point:	100 to 110 °C 212-230°F
Melting Point:	-20 - -5°C 14°F
Freezing Point:	-20 to -5°C
Vapor Pressure:	Not available
Specific Gravity:	1.15 – 1.40
Vapor Density:	1.3
% Volatile (By Wt):	Not available
pH:	<1.1
Saturation in Air (% by Vol):	Not applicable
Evaporation Rate:	Not available
Solubility in Water:	100 % soluble
Volatile Organic Content:	Not available
Flash point:	Not applicable
Flammable Limits (% By Vol):	Not applicable
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available

10. STABILITY AND REACTIVITY

Stability: Stable

Conditions to avoid: Avoid contact with mineral acids, excessive heat and bases/alkalis.

Polymerization: Will not occur

Conditions to avoid: None known

Material to Avoid: Metals such as iron, or steel which are subject to corrosion. Carbon steel, aluminum, carbon, brasses, and nylon.

Hazardous Decomposition Products: Thermal decomposition: after completely dry and heated to decomposition will produce sulfur oxides and aluminum oxides as well as HCL gas.

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.

Toxicological information on the regulated components of this product is as follows:

Aluminum chloride has an oral (rat) LD50 of 3700 mg/kg. Anhydrous aluminum chloride is very irritating to the eyes and skin. It reacts with moist air and water to release strongly acidic hydrogen chloride. Direct contact with aluminum chloride solutions may cause moderate to severe eye and skin irritation depending on the concentration. Inhalation overexposure may cause irritation of the eyes and respiratory tract. Repeated inhalation of aluminum slats have led to asthma-like symptoms in some workers. Studies in animals have shown effects on the developing fetus, neurotoxic effects and effects on the kidney, liver and blood following repeated doses.

Hydrochloric acid has a 4-hour inhalation LC50 (rat) value of 3124 ppm (4.7 mg/L). Contact with hydrochloric acid solutions or mists can cause severe skin and eye irritation. Acute overexposure to hydrochloric acid vapor may cause severe eye and respiratory tract irritation.

12. ECOLOGICAL INFORMATION

All ecological information provided was conducted on a structurally similar product.

Ecotoxicological Information: Fish Toxicity: Test: Acute toxicity, saltwater (EPA Method)

Duration: 96 hr Species: Mosquitofish (*Gambusia affinis*) 27.1 mg/L LC50

Invertebrate test results : Test: Acute Toxicity, saltwater (EPA Method)

Duration: 48 hr Species: Water Flea EC50 *Daphnia magna* 3.9 mg/L

13. DISPOSAL CONSIDERATIONS

Review federal, state, and local government requirements prior to disposal.

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicate if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristic. There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, See Section 9 of this MSDS (flash point). For Corrosivity, see sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. Federal regulations, may also apply to the classification of the material to be disposed. The company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The company recommends that organic materials classified as RCRA hazardous wastes to be disposed of by thermal treatment or incineration at EPA approved facilities. The company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method. All local and federal regulations should be followed.

14. **TRANSPORT INFORMATION**

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Proper shipping name: Aluminum chloride solution
Hazard Class: 8
UN/ID Number: UN2581
Transport Label Required: Corrosive
Hazardous Substances: Not applicable

TRANSPORT CANADA

Proper shipping name: Aluminum Chloride solution
Hazardous Class: 8
Packing Group: III
UN Number: UN2581
Transport Label Required: Corrosive

ICAO/IATA

Proper shipping name: Aluminum chloride solution
Hazard Class: 8
Packing group: III
UN Number: UN2581
Transport label required: Corrosive
Packing instructions/ Maximum net quantity per package
Passenger Aircraft: See regulations
Cargo Aircraft: See regulations

IMO

Proper Shipping name: Aluminum chloride solution
Hazard Class: 8
UN Number: UN2581
Packing Group: III
Transport label required: Corrosive

15. **REGULATORY INFORMATION**

INVENTORY INFORMATION

USA : All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical I inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances(AICA).

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese Inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese Inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER INFORMATION

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component/CAS No.	%	TPQ (lbs)	RQ (lbs)	S313	TSCA 12B
Ammonium chloride/7446-70-0	26-30	None	0	No	No
Hydrochloride acid/7647-01-0	<1	500	5000	Yes	No

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute

- NFPA HAZARD RATING (National Fire Protection Association)

Health 2- Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire 0- Materials that will not burn.

Reactivity 0 -Materials that in themselves are normally stable, even under fire exposure conditions.

This information is given without any warranty or representation. 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 the company, the information is accurate and reliable as of the date indicated but the company makes no express or implied warranty of merchantability for the material or the information. The company makes no express or implied warranty of fitness for a purpose for the material or for the information.