



Solve 50 U

Safety Data Sheet

Date Issued: 03/03/2015
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I. PRODUCT/COMPANY IDENTIFICATION

Product Name: **Solve 50 U**
Generic Name: Aluminum Chloride Hydroxide Sulfate solution
Recommended use: Water treatment chemical
Chemical Type: Liquid
UN/ID No: UN1760
COMPANY: WaterSolve, LLC, 5031 68TH Street Caledonia, Michigan 49316, USA
For Product information call 616-575-8693
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

II. HAZARDS IDENTIFICATION EMERGENCY OVERVIEW

Physical state	Color	Appearance	Odor
Liquid	Clear, colorless to amber	Normally clear but may be hazy	Negligible

Classification

Skin corrosion/irritation	Category 2
Corrosive to metals	Category 1

GHS Label elements, including precautionary statements Signal Word: Warning



DANGER

Hazard statements

Causes skin irritation and eye irritation.
May be corrosive to metals.

Precautionary statements- Prevention

Do not breathe dust/fumes/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements-Response

If on skin (or hair): Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off all contaminated clothing and wash before reuse.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Precautionary Statements- Storage

Store in a secure area. Store in corrosive resistant plastic or FRP container or container with corrosive resistant inner liner.

Precautionary Statements – Disposal

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): May be D002 under S261.22 (a) (2) due to the rate of corrosion of metal.

III. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Polyaluminum chloride, solution

Chemical name	CAS#	Weight %
Water	7732-18-5	55-85
Aluminum chloride Hydroxide Sulfate	39290-78-3	15-45

IV. FIRST AID MEASURES

General Advice: After first aid, get appropriate in-plant, paramedic, or community medical support.

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get immediate medical attention/advice.

Skin Contact: Wash off immediately with plenty of water. Take off contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention if there is any indication of a chemical burn.

Inhalation: (mist or spray)Remove from exposure, seek medical treatment if any symptoms occurs.

Ingestion: If conscious give large amounts of water. Seek medical attention immediately.

Most important symptoms and effects

Symptoms: Causes serious eye damage. May cause skin irritation.

Indication of any immediate medical attention and special treatment needed

Note to Physician: Treat symptomatically.

V. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media: None identified.

Specific Hazards Arising from Chemical: Negligible fire hazard. Decomposition products may be toxic.

Hazardous Decomposition Products: Hydrogen chloride. Sulfur Dioxide.

Protective Equipment and Precautions for Firefighters:

As in any fire wear self-contained breathing apparatus pressure –demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Do not release runoff from fire control methods to sewers or waterways. Use water spray to keep containers cool.

VI. ACCIDENTAL RELEASE MEASURES/WASTE DISPOSAL

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Use personal protective equipment as required in Section 8. Keep unnecessary people away, isolate hazard area and restrict entry.

Environmental Precaution: Do not release into sewers or waterways. See Section 12 for additional Ecological Information.

Methods and material for containment and clean up

Methods for Containment: Prevent further leakage or spillage if safe to do so.

Methods for Clean-up: Small spills: If directed to an industrial sewer, wash down with large volumes of water. Spills can be neutralized and absorbed with soda ash or lime, but neutralization will release carbon dioxide, which can generate a breathing hazard. For large spills: dike far ahead of liquid spill for later disposal. Contain large spills and pump into a suitable tank for disposal. Neutralize with a lime or soda ash if necessary. Adequate ventilation is required due to release of Carbo Dioxide.

VII. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling: Wash thoroughly after handling. Wash face, hands and any exposed skin thoroughly after handling. Remove contaminated clothing and wash thoroughly after handling. Use with adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray. Use personal protection recommended in Section 8. Ensure that all containers are labeled in accordance with OSHA regulations. Avoid contact with metal, as product will slowly corrode iron, brass, copper, aluminum and mild steel. Avoid contact with skin, eyes, and clothing. Do not eat, drink or smoke while using this material. Store and handle in accordance with good industrial hygiene and safety practice. Keep container tightly closed when not in use.

Conditions for safe storage, including any incompatibilities

Storage Conditions: Keep storage container tightly closed when not in use, in a dry and well-ventilated place. Store locked up. Keep storage temperature below 30°C/86°F. See original container for storage recommendations. Store away from incompatible materials. Protect from physical damage. Protect from freezing.

Packaging Materials: Store in rubber-lined, plastic or FRP vessels.

Incompatible Materials: Metals such as aluminum, tin, and zinc. Strong alkalis.

VIII. EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Guidelines No exposure limits noted for ingredient(s).

Individual protection measures, such as personal protective equipment:

Eye / Face Protection: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133. Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with, contact lenses. Eye wash station should be readily available. Do not wear contact lenses.

Skin Protection: Wear appropriate chemical resistant clothing including chemical resistant gloves, to prevent skin contact. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid. Impervious gloves, clothing and rubber boots are recommended.

Respiratory Protection: Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. **WARNING ! :** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. 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. "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators. Wear NIOSH/OSHA approved respirator with appropriate cartridge if there is any potential exposure to mists in handling or firefighting.

General Hygiene Considerations: Contaminated Equipment: Separate contaminated work clothes from street clothes. Wash contaminated clothing before reuse. Remove this material from your shoes and clean personal protective equipment. Do not eat, drink, smoke or apply cosmetics while handling this product. Always observe good personal and industrial hygiene measures, such as washing after handling the material and before eating, drinking, smoking, using the toilet, or applying cosmetics. Eyewash and safety showers are recommended.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:	Liquid, clear, colorless to amber color
Odor:	Negligible
Odor Threshold:	Not determined
pH:	>2 to 3.5
Relative density; specific gravity:	$1.2 \pm 0.1(1=\text{Water}) @ 4^{\circ}\text{C}$
Initial Boiling point/Range:	>110°C/>230°F
Melting point/freezing point:	<-17.8°C/ <0°F
Decomposition temperature:	$\pm 120^{\circ}\text{C}/250^{\circ}\text{F}$
Viscosity:	5-50 centipoise @ 25°C (77°F)

Auto-ignition temp:	Not flammable
Evaporation Rate:	Similar to water
Solubility in Water:	Not information
Flash point:	Will not burn
Flammable (solid,gas):	Not flammable
Upper/lower flammability or Explosive limits:	Will not burn
Partition coefficient (n-octanol/water):	Not relevant
Solubility:	Soluble in water
Vapor Pressure:	Similar to water
Vapor Density:	Similar to water

X. STABILITY AND REACTIVITY DATA

Reactivity: Not reactive under normal conditions.

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous

Reactions: Reacts with zinc and aluminum to form hydrogen gas. Contact with strong alkalis (e.g. Ammonia and its solutions, Sodium hydroxide (caustic), potassium hydroxide, chlorites) may generate heat, splattering or boiling and toxic vapors.

Hazardous Polymerization: Hazardous polymerization does not occur.

Conditions to Avoid: Protect from freezing. Keep separated from incompatible substances.

Incompatible Products: Metals such as aluminum, iron, zinc, tin. Strong alkalis.

Haz. Decomposition Products: Hydrogen chloride. Sulfur dioxide.

XI. TOXICOLOGICAL INFORMATION

Likely routes of exposure:

Eye contact: Causes serious eye irritation.

Skin contact: Avoid contact with skin.

Inhalation: Avoid breathing vapors or mists.

Ingestion: Do not taste or swallow.

Component information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Aluminum Chloride Hydroxide Sulfate 39290-78-3	>5,000mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms: Please see Section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity: Not determined.

XII. ECOLOGICAL INFORMATION

Ecotoxicity

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Aluminum chloride Hydroxide Sulfate 39290-78-3		LC50 Leuciscus idus melanotus : 1460-1500 mg/L 48h. static		LC50 Daphnia magna 48h: 3.9mg/L Static

Persistence and Degradability: Not determined.

Bioaccumulation: Not determined.

Mobility

CHEMICAL NAME	Partition Coefficient
Aluminum Chloride Hydroxide Sulfate 39290-78-3	3

Other adverse effects: Not determined.

XIII. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste disposal Methods: Dispose of waste in accordance with all regional, federal, state and local laws and regulations. Subject to disposal regulation: U.S. EPA 40 CFR 262. Hazardous Waste Number (s): May be D002 under S261.22 (a) (2) due to the rate of corrosion of metal.

Contaminated Packaging: Dispose of waste in accordance with all regional, federal, state and local laws and regulations.

XIV. TRANSPORT INFORMATION

Note: Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT:

Proper Shipping Name: Corrosive liquid, n.o.s. (Aluminum Chloride hydroxide sulfate)

Hazard Class: 8

UN-NO: UN1760

Packing Group: III

IATA:

Proper Shipping Name: Corrosive liquid, n.o.s. (Aluminum Chloride hydroxide sulfate)

Hazard Class: 8

UN-NO: UN1760

Packing Group: III

IMDG:

Proper Shipping Name: Corrosive liquid, n.o.s. (Aluminum Chloride hydroxide sulfate)

Hazard Class: 8

UN-NO: UN1760

Packing Group: III

Marine Pollutant: This material may meet the definition of a marine pollutant.

XV. REGULATORY INFORMATION

International Inventories: Not determined.

U. S. Federal Regulations

Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

SARA 311-312 Hazardous Categorization

Chronic Health Hazard	No
Acute Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Not listed

CWA (Clean Water Act)

Not listed

U. S. State Regulations

U.S. State Right-To-Know Regulations

Not determined

WHMIS Hazard Class
E Corrosive Material



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NFPA	Health hazards	Flammability	Instability	Special Hazards
	1	0	0	Not determined
HMIS	Health hazards	Flammability	Physical Hazards	Personal Protection
	1	0	0	Not determined

OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. 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. Users of any chemical should educate themselves on all aspects of its use by independent investigation of current scientific and medical knowledge that the material can be used safely. Both the supplier and manufacturer make no representations and assume no liability for any direct, incidental or consequential damages resulting from its use. Both the supplier and manufacturer make no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. 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. Users of any chemical should educate themselves on all aspects of its use by independent investigation of current scientific and medical knowledge that the material can be used safely. The buyer assumes all responsibility for using and handling the product in accordance with applicable federal, state and local regulations.

List of abbreviations and acronyms that could be, but not necessarily are, used in the safety data sheet:

- ACGIH: American Conference of Industrial Hygienists
- BEI: Biological Exposure Index
- CAS Chemical: Abstracts Service (Division of the American Chemical Society)
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
- CMR: Carcinogenic, Mutagenic or Toxic for Reproduction
- DOT: Department of Transportation
- FG: Food grade
- FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
- GHS: Globally Harmonized System of Classification and Labeling of Chemicals
- H-statement: Hazard Statement
- HMIRC: Hazardous Materials Information Review Commission
- HMIS: Hazardous Materials Identification System
- IATA: International Air Transport Association
- IATA-DGR: Dangerous Goods Regulation by the "International Air Transport Association" (IATA)
- ICAO: International Civil Aviation Organization
- ICAO-TI (ICAO): Technical Instructions by the "International Civil Aviation Organization"
- IMDG: International Maritime Code for Dangerous Goods
- ISO: International Organization for Standardization
- logPow: octanol-water partition coefficient

LCxx: Lethal Concentration, for xx percent of test population
LDxx: Lethal Dose, for xx percent of test population
ICxx: Inhibitory Concentration for xx of a substance
ECxx: Effective Concentration of xx
N.O.S.: Not otherwise specified
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
OECD: Organization for Economic Co-operation and Development
OEL: Occupational Exposure Limit
OSHA: Occupational Safety and Health Administration
P-Statement: Precautionary Statement
PBT: Persistent, Bioaccumulative and Toxic
PMRA: Health Canada Pest Management Regulatory Agency
PPE: Personal Protective Equipment
RTK: Right to Know
SDS: Safety Data Sheet
STEL: Short-term exposure limit
STOT: Specific Target Organ Toxicity
TLV: Threshold Limit Value
TWA: Time-weighted average
VPVB: Very Persistent and Very Bioaccumulative
WEL: Workplace Exposure Level
WHMIS: Workplace Hazardous Materials Information System