



## Inorganic Coagulant Solve 5D

### 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

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)

#### I. PRODUCT IDENTIFICATION

Product Name: **Solve 5D**  
Chemical Type: Liquid Aluminum Sulfate

#### II. HAZARDS IDENTIFICATION

**Emergency Overview: White or creamy white granules or powder with no odor. . Can irritate the skin and eyes. Not flammable, but may release toxic vapors if decomposed in a fire.**

OSHA Hazard Communication Standard: *This product is considered hazardous under the OSHA Hazard Communications Standard.(29 CFR 1910.1200).*

##### **Health Effects:**

Skin: May cause skin irritation, may cause dermatitis after prolonged or repeated contact.  
Eye Contact: Causes irritation and painful burns of the eye and eyelids upon contact. Symptoms are stinging, burning, redness, tearing.  
Ingestion: May irritate the gastrointestinal tract. Concentrated solutions may cause burns in the digestive tract.  
Inhalation: Exposure to mist may cause nose, throat and respiratory tract irritation.

**Delayed Effects:** None known.

#### III. COMPOSITION/INFORMATION ON INGREDIENTS

<b>Component:</b>	<b>CAS#</b>	<b>Weight %</b>
Aluminum Sulfate	10043-01-3	57-60 (anhydrous)

#### IV. FIRST AID

Eye Contact: **Do not rub.** Immediately flush eyes gently for 15 minutes with plenty of water. Call a physician immediately if irritation persists.  
Skin Contact: Flush skin with plenty of water at least 15 minutes while removing contaminated clothing and shoes .Seek medical attention, if irritation develops. Wash clothing before reuse.  
Inhalation: Remove person from exposure area to fresh air. Seek medical attention if needed.  
Ingestion: If conscious, give large quantities of water or milk. If not already vomiting, induce vomiting by touching finger to back of throat. . Seek immediate medical attention immediately. Never give anything by mouth to unconscious individual.

Note to Physician: Treat symptomatically.

**V. FIRE AND EXPLOSION HAZARD DATA**

Flashpoint: Not flammable  
 Autoignition Temperature: Not applicable  
 Upper Flame Limit Not applicable  
 Lower Flame Limit Not applicable  
 Flame Propagation Rate Not applicable  
 OSHA Flammability Class Not applicable  
 Extinguishing Media Water spray, foam, carbon dioxide or dry chemical.  
 Unusual Fire and Explosion Haz.: None

**Explosion Limits**

Special Fire Fighting Instructions Use self-contained breathing apparatus. Use water spray to keep containers cool.  
 Hazardous Combustion Products No information available  
 Impact Sensitivity No information available  
 Sensitivity to static discharge No information available

**Specific Hazards Arising from the Chemical:**

Keep product and empty container away from heat and sources of ignition.

**Protective Equipment and Precautions for Firefighters**

Wear self-contained breathing apparatus (SCBA) and full protective equipment.  
 Other information: HMIS: 2-0-1  
 NFPA: 2-0-1

**VI. STORAGE AND HANDLING**

Storage: Keep storage container tightly closed. Store in a cool, dry and well-ventilated area. Isolate from incompatible substances.  
 Handling: Avoid contact with skin, eyes, and clothing. Do not breathe product mists.

**VII. ACCIDENTAL RELEASE MEASURES/WASTE DISPOSAL**

Spill or Leak Procedures:  
 (See section 8 for recommended personal protective equipment.)Dike spilled material. Dilute small spills or leaks cautiously with plenty of water. Neutralize any further residue with alkali such as soda ash, lime or limestone. Insure adequate ventilation if soda ash or limestone is used due to release of carbon dioxide gas. Large spills: dike up with soda ash and neutralize as above. Collect liquid and/or residue and dispose of in accordance with applicable regulations. Wear protective clothing and equipment when cleaning up spill. Prevent spreading by using absorbent material. Prevent product from entering drinking water supplies or storm sewers.  
 Waste Disposal:  
 Dispose of waste in accordance with applicable federal, state, and local laws. Spills and releases may have to be reported to Federal and/or local authorities.

**VIII. EXPOSURE CONTROL/PERSONAL PROTECTION**

<u>Ingredient</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	Ontario TWAEV	Mexico OEL (TWA)	NIOSH IDLH
Aluminum Sulfate 10043-01-3				TWA:2 mg/m <sup>3</sup>	

**Engineering Measures:** Use local exhaust to keep airborne concentrations below the permissible exposure limits.

**Personal Protection Equipment:**

**Eye Protection:** If there is any probability of contact with liquid or mist, wear chemical splash goggles and face shield. Eye wash station should be readily available. Do not wear contact lenses.

**Skin Protection:** Wear appropriate personal protective clothing 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:** 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.

Additional Recommendations: To identify additional Personal Protective Equipment requirements it is recommended that a hazard assessment in accordance with OSHA PPE Standard (29CFR1910.132) be conducted before using this product. Eyewash and safety showers are recommended.

**IX. PHYSICAL AND CHEMICAL PROPERTIES**

Molecular weight:	~594 for $Al_2(SO_4)_3 \cdot 14H_2O$
Chemical Formula:	48.5% $Al_2(SO_4)_3 \cdot 14H_2O$ in water
Appearance:	White and creamy white powder
Odor:	None
Boiling point:	Not applicable
Melting point:	Not applicable
Specific gravity:	1.61
Solubility in water:	100%
Stability:	Product is stable under normal conditions
Vapor Pressure:	Not applicable
Vapor Density:	Not applicable
pH:	~3.5 (1% solution)
Evaporation Rate:	Not applicable
Solubility in Water:	Not information
Flash point:	Non flammable
Flammable Limits (% by vol):	Not available
Autoignition temp:	Not available
Explosive Properties:	No information
Oxidizing Properties:	No information
Partition coefficient (n-octanol/water)	Not available
Water solubility:	50% at 0°C
VOC Content (%):	Negligible

**X. STABILITY AND REACTIVITY DATA**

Chemical Stability:	Stable under normal conditions.
Conditions to Avoid:	If evaporated to dryness, residue should not be exposed to elevated temperatures (above 760 deg. C), as this will yield toxic and corrosive gases.
Materials to avoid:	Alkalis and water reactive materials such as oleum which causes exothermic reactions.

Haz. Decomposition Products: At elevated temperatures, sulfur oxides may be formed. These are toxic and corrosive and are oxidizers. Sulfur trioxide is also a fire hazard. The loss of these gases leaves a caustic residue.

Hazardous Polymerization: Will not occur under normal temperatures and pressures.

**XI. TOXICOLOGICAL INFORMATION**

**Acute Toxicity**

LD50 (oral, mouse): 6,207 mg/kg

LD50 (oral, rat): 1,930 mg/kg

**Component information**

Irritation No information available.  
Corrosivity No information available.  
Sensitization No information available.

**Chronic Toxicity**

Carcinogenicity There are no known carcinogenic chemicals in this product.  
Mutagenic effects No information available.  
Reproductive effects No information available.  
Developmental effects No information available.  
Teratogenicity No information available.  
Target Organ effects No information available.  
Endocrine Disruptor Info No information available.

**XII. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Aluminum Sulfate		LC50=100 mg/L Carassius auratas 96hr LC50= 37 mg/L Gambusia affinis 96hr		Min EC50 136mg/L 15min.

**Persistence and Degradability** No information available.  
**Bioaccumulation** No information available.  
**Mobility in Environmental Media:** No information available.  
**Other adverse effects:** 14ppm/36 hr/fundulus/fatal/fresh water;  
240 ppm/48 hr/mosquito fish/TLm/water type not specified  
TLm Mosquito fish, 235 ppm, 96 hrs  
LC50 Largemouth bass, 250ppm, 96 hrs

**XIII. DISPOSAL CONSIDERATIONS**

Waste disposal Methods: If permitted by regulations, material may be neutralized with alkali.  
Neutralized waste may have to be disposed of by an approved contractor.  
Contaminated Packaging: Empty containers should be taken for local recycling, recovery or waste disposal.  
US EPA Waste Number: No information available.

Component/ CAS. #	RCRA-basis for listing	RCRA-D Series Wastes	RCRA- U Series Wastes	RCRA-F Series Wastes	RCRA-P series Waste	RCRA- K Series Waste
Aluminum sulfate 10043-01-3						

**XIV. TRANSPORTATION INFORMATION**

**DOT: Regulated**  
**Proper Shipping Name:** Environmentally hazardous substances, solid, n.o.s. (contains aluminum sulfate) (only if greater than 5000 lbs. in one package)  
**Hazard Class:** 9  
**UN-NO:** UN3077  
**Packing Group:** PGIII

**TDG: Regulated**  
**Hazard Class:** 9  
**UN-NO:** UN3077  
**Packing Group:** PGIII

**XV. REGULATORY INFORMATION**

**International Inventories**

**TSCA** complies  
**DSL** complies  
**NDSL** does not comply  
**EINECS** complies  
**ELINCS** does not comply  
**ENCS** complies  
**CHINA** complies  
**KECL** complies  
**PICCS** complies  
**AICS** complies

U. S. Federal Regulations

**SARA 313**

Section 313 of Title III of Superfund Amendments and Reauthorization; Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations, Part 372.

**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

Clean Water Act

**CERCLA**

Component	Hazardous Substances RQs	CERCLA EHS RQs
Sulfuric acid	1000 lb	1000 lb

U. S. State Regulations

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**State Right-To-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Aluminum sulfate	x	x	x		

**Other International Regulations**

**Mexico-Grade**

No information available.

**Canada**

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.**

WHMIS Hazard Class

D2B Toxic Materials

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