# Inorganic Coagulant
# Solve 5G

# 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

. EMERGENCY CONTACTS (24HR)

**FOR EMERGENIES INVOLVING CHEMICAL SPILL OR RELEASE, CALL**
**CHEMTREC (800) 424-9300 USA (TOLL FREE)**
**CANUTEC (613) 996-6666 CANADA (CALL COLLECT)**

## I. Product Identification

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

| Component: | CAS# | Weight % |
|---|---|---|
| Aluminum Sulfate | 10043-01-3 | ~48.5 |

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 Communications Standard.*

## II. Hazards Identification

**Emergency Overview:** A clear, odorless light green or amber liquid. Can irritate the skin and eyes. Not flammable, but may release toxic vapors if decomposed in a fire.

Health Effects:

| | |
|---|---|
| Skin: | May cause 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, 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 irritation. |

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. |
| Inhalation: | Remove person from exposure area to fresh air. Seek medical attention if needed. |
| Ingestion: | If conscious, give large quantities of water or milk. Never give anything by mouth to unconscious individual. Seek immediate medical attention. |
| Note to Physician: | Antidote:<br>No special antidote. Treat symptomatically and supportively. |

## IV. 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 | Product is not flammable. Use any extinguishing agent suitable for surrounding fire. |
| Unusual Fire and Explosion Haz.: | None |
| Special Fire Fighting Instructions | Use self-contained breathing apparatus. Use water spray to keep containers cool. |

## V. Storage and Handling

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|---|---|
| Storage: | Store in cool area. |
| Handling: | Avoid contact with skin, eyes, and clothing. Do not breathe product mists. |

## VI. Accidental Release Measures/Waste Disposal

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|---|---|
| Spill or Leak Procedures: | 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. |

## VII. Applicable Control Measures& Exposure Limits

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

Personal Protection Equipment:

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|---|---|
| Eye Protection: | Wear chemical splash goggles and face shield. Eye wash station should be readily available. Do not wear contact lenses. |
| Skin Protection: | Impervious gloves, clothing and rubber boots are recommended. |
| Respiratory Protection: | Wear NISOSH/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.

Exposure Limits:

| Ingredient | ACGIH TLV | OSHA PEL | Other |
|---|---|---|---|
| Aluminum Sulfate (As Aluminum) | 2 mg/m3 | 2 mg/m3 | None |

## VIII. Typical Physical Properties

| | |
|---|---|
| Molecular weight: | ~594 for Al2(SO4)3 14H2O |
| Chemical Formula: | 48.5% Al2(SO4)3 14H2O in water |
| Appearance: | Clear, light green to amber liquid |
| Odor: | None |
| Boiling point: | 101℃ |
| Melting point: | -16℃ |
| Specific gravity: | 1.335 |
| Solubility in water: | 100% |
| Volatile (by wt. %): | ~50 |
| Flash Point | Not flammable |
| PH as is: | 3.5 (1% solution) |
| Stability: | Product is stable under normal conditions |
| Flash point: | Not flammable |

## IX. Reactivity Data

| | |
|---|---|
| Shelf Life: | Product is stable. 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. |

## X. Transportation Information

DOT

| | |
|---|---|
| Proper Shipping Name: | Corrosive liquid, acidic, inorganic, N.O.S. (Aluminum sulfate) |
| UN #: | UN 3264 |
| US DOT Hazard Class: | 8, PG lll |

## XI. Toxicological/Ecological Information

Toxicological

Immediate (Acute) Effects:

Aluminum Sulfate:

LD50 (oral, mouse): 6,207 mg/kg
LD50 (oral, rat): 1,930 mg/kg

Delayed (Sub chronic and Chronic) effects: Data not available

Ecological:

14 ppm/36 hr/fundulus/fatal/fresh water.
240 ppm/48 hr/mosquito fish/TLm/water type not specified.
$TL_m$ mosquito fish, 235 ppm, 96 hrs
LC50 Largemouth Bass, 250ppm, 96 hrs

Wildlife Toxicity (WLTX):
EC50 Aphanizomenon flos-aquae (Blue-green algae; decreased nitrogen fixation ability) >25 mg/L/1.5 hr and 22 hr;
EC50 Asellus aquaticus (Aquatic sowbug; intoxication/immobilization) 6570 ug/L/48 hr
EC50 Asellus aquaticus (Aquatic sowbug; intoxication/immobilization) 4370 ug/L/72 hr
EC50 Crangonyx pseudogracilis (Amphipod; intoxication/immobilization) 12800 ug/L/48 hr
EC50 Crangonyx pseudogracilis (Amphipod; intoxication/immobilization) 9190 ug/L/96 hr
EC50 Arctopsyche ladogensis (Cadisfly larvae; morphological abnormalities in the anal papillae) 938-1089 ug/L/96 hr
EC50 Hydropsyche angustipennis (Cadisfly larvae; morphological abnormalities in the anal papillae) 2265-2637 ug/L/96 hr;
EC50 Hydropsyche siltalai (Cadisfly larvae; morphological abnormalities in the anal papillae) 1219-1543 ug/L/96 hr;
LC50 Dreissena polymorpha (Zebra mussel) 130.5 mg/L/24 hr (95% confidence interval: 113.1-148 mg/L);
LC50 Dreissena polymorpha (Zebra mussel) 76.1 mg/L/3 hr (95% confidence interval
LC50 Oncorhynchus mykiss (Rainbow trout) 91 ug/L/144 hr; renewal (soft, acidic water) /technical product/
LC50 Perca fluviatilis (Perch) 661 ug/L/120 hr (95% confidence interval: 414-2189 ug/L)
LC50 Perca fluviatilis (Perch) 454 ug/L/144 hr (95% confidence interval: 273-789 ug/
LC50 Pimephales promelas (Fathead minnow) 19.3 mg/L/192 hr (95% confidence interval: 12.8-34.6 mg/L);
LC50 Pimephales promelas (Fathead minnow) 33.9 mg/L/96 hr (95% confidence interval: 26.7-49.4 mg/L); flow-through
LC50 Rutilus rutilus (Roach) 100 ug/L/10 days; renewal /technical product/
LC50 Salmo salar (Atlantic salmon) 2.9 uM/96 hr (95% confidence interval: 2.5-3.2 uM
LC50 Stizostedion lucioperca (Pikeperch) >100-<200 ug/L/10 days;

LC50 Gambusia affinis (Mosquitofish) 69 mg/L/48 hr; 37 mg/L/96 hr;
LC50 Salvelinus fontinalis (Brook trout) 4–4.4 mg/L/24 hr; 3.6 mg/L/96 hr;
LC50 Carassius auratus (Goldfish) about 100 mg/L/96 hr; static **PEER

Regulatory:
TSCA: All components of the material are listed in TSCA Inventory.
SARA Title III/Cercla:
"Reportable quantities" (RQ5) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients.

| Ingredient Name | SARA/CERCLA RQ (lb) | SARA EHS TPQ (lb) |
|---|---|---|
| Aluminum Sulfate (anhydrous) | 5000 | None |

Section 311 Hazard Class: Immediate

Spills or a release resulting in the loss of any ingredient at or above its RQ requires immediate notification to the national Response Center (800-424-8802) and to your local Emergency Planning Committee.

Sara 313 Toxic Chemicals: The proceeding ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements CAS numbers and weight percents are found in Section I.

All ingredients listed on (EINECS), (DSL), (AICS), (MITI), (ENCS), (PICCS) and (EL).

Other information: HMIS: 2-0-1
NFPA: 2-0-1