



## Solve 5

### Safety Data Sheet

Date Issued: 03/03/2015

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#### I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **SOLVE 5**

COMPANY: WaterSolve, LLC, 5031 68<sup>TH</sup> Street, Caledonia, Michigan 49316 USA

For Product information call 616-575-8693 [www.gowatersolve.com](http://www.gowatersolve.com)

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)

**Recommended use of the chemical and restrictions:** Water treatment coagulant, flocculent, alumina source for catalyst, pH control in papermaking/water treatment.

#### II. HAZARDS IDENTIFICATION

**Appearance:** Colorless to clear amber or clear light green liquid **Odor:** Negligible

**Classification:**

**Physical hazards:** Irritating to eyes Category 2

Corrosive to metals Category 1



**Label elements**

**Signal Word:** **WARNING**

**Hazard statement:** May be corrosive to metals. Harmful if swallowed. Causes eye irritation.

**Precaution statement**

**Prevention:** Wash face, hands and any exposed skin thoroughly after handling. Keep only in original container. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear Protective gloves/protective clothing/eye protection/face protection.

**Response:**

**If swallowed:** Call a poison center or doctor if you feel unwell. Rinse mouth.

**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.

**Storage:** Store locked up. Store in corrosive resistant container with a resistant inner liner.

**Disposal:** Dispose of contents/container in accordance with all applicable local/regional/national/international regulations. Subject to disposal regulations: U.S.EPA 40 CFR 262. Hazardous Waste Number(s): May be D002 under 261.22 (a) (2) due to the rate of corrosion of metal.

### III. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms:** ALUM.

**Chemical Family:** Inorganic salt

**Mixture**

CHEMICAL NAME	CAS NUMBER`	Weight %
Water	7732-18-5	>50
Aluminum Sulfate	10043-01-3	<50

### IV. FIRST AID MEASURES

**Eye Contact:** If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a physician/doctor if irritation continues.

**Skin Contact:** Flush skin with plenty of soap and water for at least 15 minutes while removing contaminate clothing and shoes. Get medical aid if irritation develops or persists. Wash contaminated clothing before reuse.

**Inhalation:** If adverse effects occur, remove to fresh air and observe. If not breathing, give artificial respiration. Seek immediate medical attention/advice.

**Ingestion:** If a large amount is swallowed, get medical attention immediately. Rinse mouth. Never give anything by mouth to unconscious individual.

**Most important symptoms/effects, acute and delayed:**

Causes serious eye damage. May cause skin irritation.

**Indication of immediate medical attention and special treatment needed:**

Notes to physician: treat symptomatically.

### V. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Aluminum Sulfate will not burn. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Small fire:** Move containers from fire area if you can do it without risk. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**Large fires:** Same procedures as for small fires.

**Specific hazards arising from the chemical:** Oxides of sulfur

**Sensitivity to Mechanical impact:** Not sensitive.

**Sensitivity to Static discharge:** Not sensitive.

**Special 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.

### VI. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:** Use personal protection recommended in Section 8. Keep unnecessary personnel away, isolate hazard area and deny entry. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see Section 8 or the SDS.

**Environmental Precautions:**

Do not release into sewers or waterways. For spills in excess of allowable limits (RQ) notify the National Response Center (800) 424-8802; refer to SARA Title III, Section 313 40 CFR 372, and CERCLA 40 CFR 302 for detailed instructions concerning reporting requirements. Notify Local Emergency Planning Committee (LEPC) and State Emergency Response Commission (SERC) for a release greater than or equal to Reportable Quantities (RQ). Refer to U.S. SARA Section 304. See Section 12 for additional Ecological Information.

**Methods and materials for containment and cleaning up**

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

**Methods for Clean-up:** Small spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

## VII. HANDLING AND STORAGE

### Precautions for safe handling

**Advice for safe handling:** Avoid contact with skin, eyes or clothing. Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling. Store and handle in accordance with all current regulations and standards.

### **Conditions for safe storage, including any incompatibilities:**

**Storage conditions:** Keep container tightly closed ore in a cool, dry and well-ventilated place. Store with acids. See original container for storage recommendations. Store away from incompatible materials.

**Incompatible Materials:** alkalis, metals, alkalis bases: Violent reaction. Metals: May be corrosive in the presence of moisture.

## VIII. EXPOSURE CONTROL/PERSONAL PROTECTION

**Exposure Guidelines** No exposure limits noted for product.  
Exposure Limits for aluminum metal  
NIOSH REL-TWA 10mg/m<sup>3</sup> (total) TWA 5 mg/m<sup>3</sup> (resp)  
OSHA PEL-TWA 15mg/m<sup>3</sup> (total) TWA 5 mg/m<sup>3</sup> (resp)

**Appropriate Engineering Controls:** Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. Maintain eye wash fountain and quick-drench facilities in work area.

### **Individual protective measures, such as Personal Protection Equipment:**

**Eye Protection:** Wear chemical tight goggles and full face shield. Eye wash station should be readily available. Do not wear contact lenses.

**Skin/Body Protection:** Wear appropriate chemical resistant clothing including chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. If prolonged or repeated contact is anticipated, all clothing should be impervious to liquid. Impervious gloves, clothing and rubber boots are recommended.

**Other:** Wear appropriate chemical resistant clothing. Use of an imperious apron is 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. In case of insufficient ventilation, wear suitable respiratory equipment. **WARNING!** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Additional Recommendations and General hygiene considerations:** Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Before eating, drinking or smoking, wash face and hands thoroughly with soap and water. Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use.

## IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Physical state:	liquid
Form:	liquid
Color:	Colorless to clear amber or clear light green liquid
Odor:	Negligible
Odor threshold:	Not determined
Initial Boiling point:	Not relevant
Melting/freezing point:	-13°C/9°F
Viscosity:	5-25 centipoise

pH:	2.0-2.4
Relative Density; (specific gravity):	± 1.3 @15.5°C
Flammability (solid/gas):	Not flammable
Flash point:	Will not burn
Evaporation Rate:	Similar to water
Upper/lower flammability Or explosive limits:	Will not burn
Solubility in water:	Completely soluble in water.
Autoignition temp:	Not flammable
Decomposition temp:	± 1,400°F
Partition coefficient (n-octanol/water)	Not relevant
Vapor pressure:	Similar to water
Vapor Density:	Similar to water

X. **STABILITY AND REACTIVITY DATA**

Reactivity: Not reactive under normal conditions.

Chemical stability: Material is stable under recommended storage conditions.

Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.

Hazardous Polymerization: Hazardous polymerization does not occur.

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

Incompatible materials: Alkalis, metals. Alkalis (bases): Violent reaction. Metals; May be corrosive in the presence of moisture.

Haz. Decomposition Products: Thermal oxidative decomposition of Aluminum Sulfate occurs at temperatures greater than 1400°F and can produce sulfur oxides.

XI. **TOXICOLOGICAL INFORMATION**

**Information on likely routes of exposure**

**Inhalation:** Avoid breathing vapors or mists.

**Skin contact:** May cause skin irritation.

**Eye contact:** Causes serious eye damage.

**Ingestion:** Do not taste or swallow. May be harmful if swallowed.

**Component information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Sulfate 10043-01-3	=1930 mg/kg (Rat)	-	-
Water 7732-18-5	>90 mg/kg (Rat)	-	-

**Information on physical, chemical and toxicological effects**

**Symptoms:** Please see Section 4 of the 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**

<b>Chemical Name</b>	<b><u>Algae/aquatic plants</u></b>	<b><u>Fish</u></b>	<b>Toxicity to Microorganisms</b>	<b><u>Crustacea</u></b>
Aluminum Sulfate 10043-01-3			LC50/96h/Carassius auratus/100mg/L LC50/96h (Gambusia affinis) : 37 mg/l static	EC50/15min/Daphnia Magna: 136 mg/L

**Persistence and degradability:** Not determined.

**Bioaccumulative potential:** Not determined.

**Mobility in soil:** Not determined.

**Other adverse effects:** Not determined.

**XIII. DISPOSAL CONSIDERATIONS**

**Waste Treatment Methods**

**Disposal of waste:** Dispose of contents/container in accordance with all local/regional/national/international regulations.

**Contaminated packaging:** Dispose of contents/container in accordance with all local/regional/national/international regulations.

**US EPA Waste Number:** D002: ( Corrosive) if the pH <2. May be D002 per 40CFR 261.22 (a)(2) due to the rate of corrosive to steel. The U.S. EPA has not published waste codes for this products components.

**XIV. TRANSPORTATION INFORMATION**

**Note:** Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances. Information also applies to TDG, ADR and RID.

**US DOT**

**Proper shipping name:** Corrosive liquid, acidic, inorganic, n.o.s., (Aluminum Sulfate)  
**Hazard Class:** 8  
**Packing Group:** III  
**UN/ID Number:** UN3264  
**Reportable Quantity (RQ):** 5000lb.

**IATA**

**Proper shipping name:** Corrosive liquid, acidic, inorganic, n.o.s., (Aluminum Sulfate)  
**Hazard Class:** 8  
**Packing Group:** III  
**UN/ID Number:** UN3264

**IMDG**

**Proper shipping name:** Corrosive liquid, acidic, inorganic, n.o.s., (Aluminum Sulfate)  
**Hazard Class:** 8  
**Packing Group:** III  
**UN/ID Number:** UN3264  
**Reportable Quantity (RQ):** 5000lb.

**XV. REGULATORY INFORMATION**

**International Inventories:** Not determined.

**US Federal regulations**

**CERCLA**

<b>Chemical Name</b>	<b>Hazardous Substances RQs</b>	<b>CERCLA/SARA RQ</b>	<b>Reportable Quantity (RQ)</b>
Aluminum Sulfate 10043-01-3	5000lb		RQ 5000lb final RQ RQ 2270 kg final RQ

**SARA 311/312 Hazard Categories****Acute Health Hazard:** Yes**Chronic Health Hazard:** No**SARA 313**

Section 313 of Title III of the 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 40 of the Code of Federal Regulations, Part 372.

**CWA (Clean Water Act)**

Component	CWA-Reportable Quantities	CWA-Toxic Pollutants	CWA-Priority Pollutants	CWA-Hazardous Substances
Aluminum Sulfate 10043-01-3	5000lb			x

**US State Regulations**

**California Proposition 65:** This product does not contain any of (Proposition 65) chemicals.

**U.S. State Right- to- Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Aluminum Sulfate 10043-01-3	X	X	X

**XVI. OTHER INFORMATION**

	Health hazards	Flammability	Instability	Special Hazards
NFPA	1	0	0	not determined

**DATE ISSUED: 03/03/2015****DATE REVISED: 03/03/2015****Revision number:**

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. 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