



## Solve 5155E

### Safety Data Sheet

Date Issued: 08/23/2018

Date Revised: 01/25/2018

#### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE COMPANY/UNDERTAKING

PRODUCT NAME: **SOLVE 5155E**  
TYPE OF PRODUCT: Mixture  
Relevant identified uses: Processing aid for industrial applications  
Use advised against: None  
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)

#### 2. HAZARDS IDENTIFICATION

##### 2.1 Classification of the substance or mixture

Classification according to paragraph (d) of Regulation 29 CFR 1910.1200: Not classified

##### 2.2 Label elements

Label according to paragraph (f) of Regulation 29 CFR 1910.1200:

Hazards symbol(s): None  
Signal Word: None  
Hazard statement(s): None  
Precautionary Statements: None

**2.3 Other hazards:** Aqueous solutions or powders that become wet render surfaces extremely slippery.  
For explanation of abbreviations see Section 16.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances:** Not applicable, this product is a mixture.

##### 3.2 Hazardous components

Name	CAS Number:	Concentration/-range:	Hazardous Statements
<u>Adipic acid</u>	124-04-9	<=2.5%	Eye Irrit. 2A; H319

<u>Sulfamic acid</u>	5329-14-6	<=2.5%	Skin Irrit. 2; H315 Eye Irrit. 2A; H319
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Classification according to paragraph (d) of Regulation 29 CFR 1910.1200.

For explanation of abbreviations see Section 16.

#### 4. FIRST AID MEASURES

##### 4.1 Description of first aid measures

**Inhalation:** Move to fresh air. Get medical attention if symptoms occur.

**Skin Contact:** Wash off with soap and plenty of water. Get medical attention if skin irritation develops or persists.

**Eye Contact:** Rinse immediately with plenty of water, also under the eyelids. Get medical attention.

**Ingestion:** Rinse mouth. If conscious, give the victim plenty of water to drink. Induce vomiting, but only if victim is fully conscious.

#### **4.2 Most important symptoms and effects, both acute and delayed.**

Powder can cause localized skin irritation in folds of the skin or under tight clothing. Contact with dust can cause mechanical irritation or drying of the skin.

#### **4.3 Indication of any immediate medical attention and special treatment needed.**

None

#### **Other information**

No information available.

### **5. FIRE FIGHTING MEASURES**

#### **5.1 Extinguishing media**

**Suitable extinguishing media:** Water, water spray, foam, carbon dioxide (CO<sub>2</sub>), dry powder.

**Warning!** Aqueous solutions or powders that become wet render surfaces extremely slippery.

**Unsuitable extinguishing media:** None

#### **5.2 Special hazards arising from the substance or mixture**

##### **Hazardous decomposition products:**

Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides (NO<sub>x</sub>), carbon oxides (CO<sub>x</sub>). Hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

#### **5.3 Advice for fire-fighters**

##### **Protective measures:**

Wear self-contained breathing apparatus for fire fighting if necessary.

**Other information:** Aqueous solutions or powders that become wet produce extremely slippery surfaces.

### **6. ACCIDENTAL RELEASE MEASURES**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

##### **Personal precautions:**

Aqueous solutions or powders that become wet produce extremely slippery surfaces.

##### **Protective equipment:**

Wear adequate personal protective equipment (see Section 8 Exposure Controls/Personal Protection).

**Emergency procedures:** Keep people away from spill/leak. Prevent further leakage or spillage if safe to do so.

#### **6.2 Environmental precautions**

As with all chemical products, do not flush into surface water.

#### **6.3 Methods and material for containment and cleaning up**

**Small spills:** Do not flush with water. Clean up promptly by sweeping or vacuum.

**Large spills:** Do not flush with water. Prevent unauthorized access. Sweep up and shovel into suitable containers for disposal.

**Residues:** Sweep up to prevent slip hazard. After cleaning, flush away traces with water.

#### 6.4 Reference to other sections

Section 7: Handling and storage; Section 8: Exposure controls/personal protection; Section 13: Disposal considerations

### 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling:

Avoid contact with skin and eyes. Avoid dust formation. Avoid breathing dust. Wash hands before breaks and at the end of the workday.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep in a dry place. Incompatible with oxidizing agents.

#### 7.3 Specific end use(s)

Processing aid for industrial applications.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters:

Occupational exposure limits: **Adipic acid ACHIH:** 5mg/m<sup>3</sup> (8-hour)

#### 8.2 Exposure controls

Appropriate engineering controls: Use local exhaust if dusting occurs. Natural ventilation is adequate in absence of dusts.

#### Individual protection measures, such as personal protective equipment:

- a) Eye/face protection: Safety glasses with side-shields. Do not wear contact lenses where this product is used.
- b) Skin Protection:
  - i) Hand protection: PVC or other plastic material gloves.
  - ii) Other: Chemical resistant apron or protective suit is splashing or repeated contact with solution is likely.
- c) Respiratory protection: Dust safety masks recommended where working powder concentration is more than 10 mg/m<sup>3</sup>.
- d) Additional advice: Wash hands before and at the end of the day. Handle in accordance with good industrial hygiene and safety.

Environmental exposure controls: Do not allow uncontrolled discharge of product into the environment.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties

- |   |  |
|---|--|
| a) Appearance:                                | Granular solid, White                        |
| b) Odor:                                      | None   |
| c) Odor threshold:                            | Not applicable                               |
| d) pH:  | 2.5 – 4.5 @ 5 g/l                            |
| e) Melting point/freezing point:              | > 100 °C                                     |
| f) Initial boiling point/range:               | Not applicable                               |
| g) Flash point:                               | Not applicable                               |
| h) Evaporation rate:                          | Not applicable                               |
| i) Flammability (solid, gas):                 | Not combustible                              |
| j) Upper/lower flammability/explosive limits: | Not expected to create explosive atmospheres |
| k) Vapor pressure (mmHg):                     | Not applicable                               |

l) Vapor density:	Not applicable
m) Relative density:	0.6 – 0.9
n) Solubility(ies):	Soluble in water
o) Partition coefficient:	<0
p) Autoignition temp.:	Not applicable
q) Decomposition temperature:	> 200°C
r) Viscosity:	See Technical Bulletin
s) Explosive properties:	Not expected to be explosive based on the chemical structure.
t) Oxidizing properties:	Not expected to be oxidizing based on the chemical structure.

**9.2 Other Information:** None

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### **STABILITY AND REACTIVITY**

**10.1 Reactivity:** Hazardous polymerization does not occur.

**10.2 Chemical Stability:** Stable

**10.3 Possibility of Hazardous reactions:** Oxidizing agents may cause exothermic reactions.

**10.4 Conditions to avoid:** None known.

**10.5 Incompatible materials:** Oxidizing agents.

**10.6 Hazardous decomposition products:** Thermal decomposition may produce: hydrogen chloride gas, nitrogen oxides (NO<sub>x</sub>), carbon oxides (CO<sub>x</sub>), hydrogen cyanide (hydrocyanic acid) may be produced in the event of combustion in an oxygen deficient atmosphere.

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### **TOXICOLOGICAL INFORMATION**

#### **11.1 Information on toxicological effects**

##### **Information on the product as supplied:**

Acute Oral toxicity:	LD50/oral/rat > 5,000 mg/kg
Acute Dermal toxicity:	LD50/dermal/rat > 5,000 mg/kg
Acute Inhalation toxicity:	The product is not expected to be toxic by inhalation.
Skin corrosion/irritation:	Not irritating
Serious Eye damage/ irritation:	Testing conducted according to the Draize technique showed the material produces no corneal or iridial effects and only slight transitory conjunctival effects similar to those which all granular materials have on conjunctivae.
Respiratory/skin Sensitization:	The results of testing on guinea pigs showed this material to be non-sensitizing.
Mutagenicity:	Not mutagenic.
Carcinogenicity:	Not carcinogenic.
Reproductive Effects:	Not toxic for reproduction.
STOT single exposure:	No known effects.
STOT- repeated exposure:	No known effects.
Aspiration hazard:	No hazards resulting from the material as supplied.

##### **Relevant information on the hazardous components**

###### **Adipic acid**

Acute Oral toxicity:	LD50/oral/rat > 2,000 mg/kg
Acute Dermal toxicity:	LD50/dermal/rat > 2,000 mg/kg
Acute Inhalation toxicity:	LC0/inhalation/rat/4h >7.7 mg/L
Skin corrosion/irritation:	Slightly irritating
Serious Eye damage/ irritation:	Not irritating (OECD 405)
Respiratory/skin Sensitization:	Not sensitizing.

Mutagenicity:	Negative in the In vitro Mammalian Cell Gene Mutation Test (OECD 476)
Carcinogenicity:	Not carcinogenic.
Reproductive Effects:	Not toxic for reproduction.
STOT single exposure:	No known effects.
STOT- repeated exposure:	No known effects.
Aspiration hazard:	No known effects.

**Relevant information on the hazardous components:**

**Sulfamic acid**

Acute Oral toxicity:	LD50/oral/rat > 2,000 mg/kg
Acute Dermal toxicity:	NOAEL/dermal/rat =2,000 mg/kg (OECD 402)
Acute Inhalation toxicity:	The product is not expected to be toxic by inhalation.
Skin corrosion/irritation:	Not irritating (OECD 404)
Serious Eye damage/ irritation:	Moderately irritating to the eyes. (EPA OPPTS 870.2400)
Respiratory/skin Sensitization:	The product is not expected to be sensitizing.
Mutagenicity:	Negative in the Ames Test (OECD 471). Negative in the In vitro Mammalian Cell Gene Mutation Test (OECD 476). Not mutagenic (OECD 472,487)
Carcinogenicity:	Based on the absence of mutagenicity, it is unlikely that the substance is carcinogenic.
Reproductive Effects:	No data available.
STOT single exposure:	No known effects.
STOT- repeated exposure:	No known effects.
Aspiration hazard:	No known effects.

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**ECOLOGICAL INFORMATION**

**12.1 Toxicity**

**Information on the product as supplied:**

Acute Toxicity to Fish:	LC50/Danio rerio/96 hr = 5 - 10 mg/L (OECD 203)
Acute Toxicity to invertebrates:	EC50/Daphnia magna /48 hr = 20 - 50mg/L (OECD 202)
Acute Toxicity to Algae:	Algal inhibitions tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.
Chronic toxicity to fish:	No data available
Chronic toxicity to invertebrates:	No data available
Toxicity to microorganisms:	No data available
Effects on terrestrial organisms:	No data available. Readily biodegradable, exposure to soil is unlikely.
Sediment toxicity:	No data available. Readily biodegradable, exposure to sediment is unlikely.

**Relevant information on the hazardous components:**

**Adipic acid**

Acute Toxicity to Fish:	LC0/Danio rerio/ 96hr. > 1000 mg/L
Acute Toxicity to Algae:	IC50/Selenastrum capricornutum/ 72 hr.=59 mg/L (OECD 201)
Acute Toxicity to invertebrates:	EC0/Daphnia magna/48 hr =46 mg/L (OECD 202)
Chronic toxicity to fish:	No data available
Chronic toxicity to invertebrates:	NOEC/Daphnia magna/21 days =6.3 mg/l (OECD 211)
Toxicity to microorganisms:	EC50/activated sludge/3 h = 4747mg/l (OECD 209)
Effects on terrestrial organisms:	No data available
Sediment toxicity:	No data available.

**Sulfamic acid**

Acute Toxicity to Fish:	LC50/Pimephales promelas/ 96hr. = 70.3 mg/L (OECD 203)
Acute Toxicity to Algae:	IC50/Senedesmus subspicatus/ 72 hr = 48mg/L (OECD 201)
Acute Toxicity to invertebrates:	EC50/Daphnia magna/ 48 hr = 71.6 mg/L (OECD 202)

Chronic toxicity to fish: No data available  
Chronic toxicity to invertebrates: No data available  
Toxicity to microorganisms: EC50/activated sludge/3h >200 mg/l (OECD 209)  
Effects on terrestrial organisms: No data available  
Sediment toxicity: No data available.

## 12.2 Persistence and degradability

### Information on the product as supplied:

Degradation: Readily biodegradable.  
Hydrolysis: At natural pHs (>6) the polymer degrades due to hydrolysis to more than 70% in 28 days.  
The hydrolysis products are not harmful to aquatic organisms.  
Photolysis: No data available

### Relevant information on the hazardous components:

#### Adipic acid

Degradation: Readily biodegradable. >70%/28 days (OECD 301D)  
Hydrolysis: Does not hydrolyse.  
Photolysis: Half-life (indirect photolysis)= 2.9 days

#### Sulfamic acid

Degradation: Not relevant (inorganic).  
Hydrolysis: Does not hydrolyse.  
Photolysis: No data available

## 12.3 Bioaccumulative potential

**Information on the product as supplied:** The product is not expected to bioaccumulate.

**Partition co-efficient LogPow:** < 0

**Bioconcentration factor (BCF):** No data available

### Relevant information on the hazardous components:

#### Adipic acid

**Partition co-efficient LogPow:** 0.093 @ 25°C, pH 3.3  
**Bioconcentration factor (BCF):** No data available

#### Sulfamic acid

**Partition co-efficient LogPow:** -4.34 @ 20°C  
**Bioconcentration factor (BCF):** No data available

## 12.4 Mobility in soil

**Information on the product as supplied:** No data available

### Relevant information on the hazardous components:

**Adipic acid** Koc: No data available

**Sulfamic acid** Koc: No data available

**12.5 Other adverse effects:** none

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Waste from residues /unused products:

Dispose of in accordance with local and national regulations. Can be landfilled or incinerated, when in compliance with local regulations.

#### Contaminated packaging:

Rinse empty containers with water and use the rinse-water to prepare the working solution. If recycling is not practicable, dispose of in compliance with local regulations. Can be landfilled or incinerated, when in compliance with local regulations.

**Recycling:** In accordance with local and national regulations.

14. **TRANSPORT INFORMATION**

Land Transport (DOT) Not classified.  
Sea Transport (IMDG) Not classified.  
Air Transport (IATA) Not classified.

15. **REGULATORY INFORMATION**

**15.1 Safety, health and environmental regulations/legislation specific for substances or mixture  
Information on the product as supplied:**

**TSCA:** All components of this product are either listed on the inventory or are exempt from listings.

**US SARA Reporting requirements:**

**SARA (SECTION 311/312) hazard class:** Not concerned

**SARA TITLE III Sections:**

**Section 302 TPQ- Reportable Quantity:** Not concerned

**Section 304-Reportable Quantity:** Not concerned

**Section 313 (De minimis concentration):** Not concerned

**Clean Water Act**

**Section 311 Hazardous Substances (40 CFR 117.3)- Reportable Quantity:**  
Contains one or more of the listed substances.

**Clean Air Act**

**Section 112(r) Accidental release prevention requirements (40 CFR 68)- Reportable Quantity:**  
Not concerned

**CERCLA Hazardous Substances List (40 CFR 302.4) Reportable Quantity:**

Contains one or more of the listed substances.

**RCRA Status:**

Not RCRA hazardous.

**California Proposition 65 Information:**

WARNING! This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm, Acrylamide.

**Relevant information on the hazardous components:**

**Adipic acid**

**Clean Water Act**

**Section 311 Hazardous Substances (40 CFR 117.3)-Reportable Quantity:** 5000lbs.

**CERCLA**

**Hazardous Substances List (40 CFR 302.4)-Reportable Quantity:** 5000lbs.

16. **OTHER INFORMATION**

**HMIS & NFPA Rating**

Health:

**HMIS**

0

**NFPA**

0

Flammability:	0	0
Reactivity:	0	0
Personal Protection Special:	B	

**Key or legend to abbreviations and acronyms used in the safety data sheet:**

Acronyms

STOT = Specific target organ toxicity

Abbreviations

Eye Irrit. 2A=Serious eye damage/eye irritation Category Code 2A

Skin Irrit. 2 = Skin corrosion/irritation Category Code 2

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Training Advice:

Do not handle until all safety precautions have been read and understood.

This SDS was prepared in accordance with the following:

Federal Regulation 29 CFR 1910.1200

**DATE ISSUED: 08/23/2018**

**DATE REVISED: 01/25/2018**

**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