



Solve 9406

Safety Data Sheet

Date Issued: 01/21/2016

Date Revised: 01/21/2016

1. **PRODUCT AND COMPANY IDENTIFICATION**

Product Name: Solve 9406
Use of Substance/Mixture: Flocculating agent
Company Identification: WaterSolve, LLC
5031 68th Street
Caledonia, Michigan 49316, USA www.gowatersolve.com

For Product Information: 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)

29 CFR 1910.1200 (OSHA HazCom 2012)

2. **HAZARDS IDENTIFICATION**

GHS CLASSIFICATION

Combustible Dust

Carcinogenicity (Dermal): Category 2

GHS Label element



Hazard pictograms:

Signal word:

Warning

Hazard statements:

**May form combustible dust concentrations in air.
Suspected of causing cancer in contact with skin.**

Precautionary Statements:

Prevention:

Obtain special instructions before use.

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

Wear protective gloves/protective clothing/eye protection/face protection.

Response:

If exposed or concerned: Get medical advice/attention.

Storage:

Store locked up.

Disposal:

Dispose of contents/container to an approved waste disposal plant.

Other hazards: None known

3. **COMPOSITION/INFORMATION ON INGREDIENTS**

Substance/Mixture: Mixture

Hazardous components

CHEMICAL NAME	CAS-No.	CLASSIFICATION	CONCENTRATION (%)
CITRIC ACID, MONOHYDRATE	5949-29-1	Eye Irrit. 2A; H319	>= 1.50 - < 5.00
UREA	57-13-6	Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)	>= 1.50 - < 5.00
COCO DIETHANOLAMIDE	68603-42-9	Skin Irrit. 2; H315 Eye Irrit. 2A; H319	>= 0.10 - < 0.50

Trade Secret Composition – conceal concertation

4. **FIRST AID MEASURES**

General Advice: No hazards which require special first aid measures.

If swallowed: Do not give milk or alcoholic beverages. Never give anything by mouth to a drowsy or unconscious person. If possible, do not leave individual unattended. If symptoms persist, call a physician.

In case of Skin Contact: First aid is not normally required. Remove contaminated clothing and shoes without delay. It is recommended that exposed areas be cleaned by washing with soap and water. Do not reuse contaminated clothing without laundering. Get medical attention if irritation develops or persists.

In case of Eye Contact: Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.

If Inhalation: Move to fresh air. If breathed in, move person into fresh air. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed:

- Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), cough, headache, shortness of breath, lung irritation, drowsiness, confusion, dizziness. Suspected of causing cancer in contact with skin.

Notes to physician: No hazards which require special first aid measures.

5. **FIRE FIGHTING MEASURES**

Suitable Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray, foam.

Specific hazards during firefighting: Organic dusts at sufficient concentration can form explosive mixtures in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products:

Carbon dioxide and carbon monoxide, Nitrogen oxides (NO_x), hydrogen chloride, acid vapors, Sodium oxides, ammonia

Specific extinguishing methods: Product is compatible with standard fire-fighting agents.

Further information: Standard procedure for chemical fires. When product is wet it causes a danger for slipping. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special Protective Equipment for fire-fighters:

In the event of fire, firefighters, and others exposed, wear self-contained breathing apparatus and protective suit. Wear full firefighting protective clothing. Use NIOSH/MSHA approved respiratory protection.

6. **ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures:

Avoid dust formation. Avoid breathing dust. Use personal protective equipment. Ensure adequate ventilation. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Material can create slippery conditions. Comply with all federal, state, and local regulations.

Environmental precautions:

Do not let product enter drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. Do not flush into surface water or sanitary sewer system. Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up:

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers, for disposal.

Other information: Comply with all applicable federal, state and local regulations.

7. **HANDLING AND STORAGE**

Advice on protection against fire and explosion:

Take measures to prevent the buildup of electrostatic charge. Provide appropriate exhaust ventilation at places where dust is formed.

ADVICE ON SAFE HANDLING:

Avoid dust formation. Container hazardous when empty. Provide sufficient air exchange and /or exhaust in work rooms. Do not breathe vapours/dust. This material is slippery when wet. Do not eat, drink or smoke when using this product. For personal protection (see Section 8). Dispose of rinse water in accordance with local and state and national regulations. Handle in accordance with good industrial hygiene and safety practice.

CONDITIONS FOR SAFE STORAGE:

Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. No smoking. Keep away from food and drink. Observe label precautions. Electrical installations/working materials must comply with the technological safety standards. Store in original container in a cool, dry ventilated area.

Materials to avoid: No materials to be especially mentioned.

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters/Permissible concentration	Basis
UREA	57-13-6	TWA	10 mg/m ³ Total particulate	WEEL
COCO DIETHANOLAMIDE	68603-42-9	ST ESL	100 µg/m ³	TX ESL
		AN ESL	10 µg/m ³	TX ESL

Engineering measures:

General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and / or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects. Provide appropriate exhaust ventilation at places where dust is formed. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. Avoid contact with skin and eyes. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection:

In case of vapor formation use a respirator with an approved filter. A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection:

Wear resistant gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

Safety glasses. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection

Wear as appropriate: safety shoes. Choose body protections according to the amount and concentration of the dangerous substances at the work place. Wear resistant gloves (consult with your safety equipment supplier). Launder clothing before reuse. Discard gloves that show tears, pinholes, or signs of wear.

Hygiene measures: Avoid breathing dust. Wash hands before breaks and at the end of the workday. When using do not eat, drink or smoke when using this product.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	powder
Physical state:	solid
Color:	white, light yellow
Odor:	amine-like
Odor threshold:	No data available
pH:	ca. 4, Concentration: 10 g/l (20°C)
Melting point/freezing point:	Not applicable
Boiling Point boiling range:	Not applicable
Flash point:	Not applicable
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper explosion limit:	No data available
Lower explosion limit:	30,000 mg/m ³
Vapour pressure:	0.00007 hPa Calculated Vapor Pressure
Relative vapour Density:	No data available
Relative density:	No data available
Density:	0.7 g/cm ³
Bulk Density:	550 - 750 kg/m ³
Solubility in Water:	Soluble
Solubility in other solvents:	No data available
Partition coefficient: n- Octanol/water:	No data available
Auto-ignition temperature:	> 400 °C
Thermal decomposition:	> 200 °C
Viscosity, dynamic	200 mPa.s
Viscosity, kinematic:	No data available
Oxidizing properties:	No data available

10. **STABILITY AND REACTIVITY**

Reactivity:	No decompositions if stored and applied as directed.
Chemical Stability:	Stable under recommended storage conditions.
Possibility of	

Hazardous reactions: Product will not undergo hazardous polymerization.
Conditions to avoid: Keep away from heat, flames, sparks and other ignition sources.
Incompatible Materials: Chlorine, nitrates, acids, metals, Strong reducing agents, Strong oxidizers agents, strong bases

Hazardous decomposition products: acid vapors, carbon dioxide and carbon monoxide, hydrogen chloride, nitrogen oxides, sodium oxides, ammonia

11. **TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure: Inhalation, skin contact, eye contact, ingestion

Acute toxicity: Not classified based on available information.

Components:

CITRIC ACID, MONOHYDRATE

Acute oral Toxicity: LD 50 (Rat): 3g/kg

COCO DIETHANOLAMIDE:

Acute oral toxicity: LD 50 (Rat): > 5,000 mg/kg

Acute dermal toxicity: LD 50 (Rabbit): > 2g/kg

Assessment: Not classified as acutely toxic by dermal absorption under GHS.

Skin corrosion/irritation: Not classified based on available information.

Components:

CITRIC ACID, MONOHYDRATE

Result: Slightly irritating to skin

UREA:

Result: Not irritating to skin.

COCO DIETHANOLAMIDE:

Result: Irritating to skin.

Serious eye damage/eye irritation: Not classified based on available information.

Product:

Result: Mildly irritating to eyes

Remarks: Unlikely to cause eye irritation or injury. Product dust may be irritating to eyes, skin and respiratory system.

Components:

CITRIC ACID, MONOHYDRATE

Result: Severely irritating to eyes.

UREA:

Result: Not irritating to eyes.

COCO DIETHANOLAMIDE:

Result: Severely irritating to eyes.

Respiratory or skin sensitization:

Skin sensitization:

Not classified based on available information

Respiratory sensitization:

Not classified based on available information.

Not classified based on available information.

Germ cell mutagenicity:

Components:

UREA:

Genotoxicity in vitro:

Test Type: Ames test Result: Negative

Carcinogenicity:

Suspected of causing cancer in contact with skin.

Components:

COCO DIETHANOLAMIDE:

Carcinogenicity- Assessment:

Limited evidence of carcinogenicity in animal studies (dermal)

Reproductive toxicity:

Not classified based on available information

STOT – single exposure:

Not classified based on available information

STOT – repeated exposure:

Not classified based on available information

Aspiration toxicity:

Not classified based on available information

Further information:

Product:

Remarks: No data available

Carcinogenicity:

IARC: Group 2B: Possibly carcinogenic to humans
COCO DIETHANOLAMIDE 68603-42-9

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

12. **ECOLOGICAL INFORMATION**

Ecotoxicity

Product:

Toxicity to fish: LC 50 Zebra fish (*Danio rerio*): > 1 - 10 mg/l
Exposure time: 96hr. Method: OECD Test Guideline 203
Remarks: Based on a similar product formulation.

Components:

CITRIC ACID, MONOHYDRATE:

Toxicity to fish: LC50 Golden orfe (*Leuciscus idus*): . 6,810 mg/l
Exposure time: 96 h
LC50 Guppy (*Poecilia reticulata*): 17,500 mg/l

**Toxicity to daphnia and other
Aquatic invertebrates:**

EC50 Water flea (*Daphnia magna*): 3,910 mg/l
Exposure time: 48 hr. Method: Static

COCO DIETHANOLAMIDE:

Toxicity to fish: LC50 zebra fish (*Danio rerio*): 3.6 mg/l
Exposure time: 96h Test type: Semi-static test

**Toxicity to daphnia and other
Aquatic invertebrates:**

EC50 Water flea (*Daphnia pulex*): 2.15 mg/l
Exposure time: Test type: Static test

Toxicity to algae: EC50 Green algae (*Desmodesmus subspicatus*): 2.2 mg/l
Exposure time: 72h

Persistence and degradability:

Components:

UREA:

Biodegradability: Remarks: Expected to be ultimately biodegradable

COCO DIETHANOLAMIDE:

Biodegradability: Result: Readily biodegradable

Bioaccumulative potential:

Components:

UREA:

Bioaccumulation: Species: Green algae (*Chlorella fusca vacuolata*)
Bioconcentration factor (BCF): 11,700
Exposure time: 24h Concentration: 0.05 mg/l
Method: Static

Partition coefficient: n-
Octanol/water:

log Pow: -2.11

Mobility in soil:

Components:

No data available

Other adverse effects:

No data available

Product:

Additional ecological information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

13. **DISPOSAL CONSIDERATIONS**

Disposal methods:

General Advice: The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging: Empty remaining contents. Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. **TRANSPORT INFORMATION**

International Transport Regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*Hazard Class	Subsidiary hazards	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
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U.S. DOT - ROAD

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1-PROPANAMINIUM, N,N,N-TRIMETHYL-3-[(1-OXO-2-PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9		III	
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U. S. DOT RAIL

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1-PROPANAMINIUM, N,N,N-TRIMETHYL-3-[(1-OXO-2-PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9		III	
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U.S. DOT - INLAND WATERWAYS

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1-PROPANAMINIUM, N,N,N-TRIMETHYL-3-[(1-OXO-2-PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9		III	
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TRANSPORT CANADA-ROAD

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1-PROPANAMINIUM, N,N,N-TRIMETHYL-3-[(1-OXO-2-PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9		III	
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TRANSPORT CANADA – RAIL

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1- PROPANAMINIUM, N,N,N- TRIMETHYL-3-[(1-OXO-2- PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9	III
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TRANSPORT CANADA – INLAND WATERWAYS

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1- PROPANAMINIUM, N,N,N- TRIMETHYL-3-[(1-OXO-2- PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9	III
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INTERNATIONAL AIR TRANSPORT ASSOCIATION – CARGO

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1- PROPANAMINIUM, N,N,N- TRIMETHYL-3-[(1-OXO-2- PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9	III
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INTERNATIONAL AIR TRANSPORT ASSOCIATION – PASSENGER

UN 3077	Environmentally hazardous Substance, solid, n.o.s. (1- PROPANAMINIUM, N,N,N- TRIMETHYL-3-[(1-OXO-2- PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9	III
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MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES

UN 3077	SUSTANCIA SOLIDA POTENCIALMENTE PELIGROSA PARA EL MEDIO AMBIENTE, N.E.P. (1- PROPANAMINIUM, N,N,N- TRIMETHYL-3-[(1-OXO-2- PROPWNYL) AMINO]-, CHLORIDE, POLYMER WITH 2-PROPENAMIDE	9	III
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***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant		yes
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Dangerous good descriptions (if indicated above) may not reflect quantity, end-use or region-specific Exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. **REGULATORY INFORMATION**

EPCRA – Emergency Planning and Community Right - to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ (lbs)
DIETHANOLAMIDE	111-42-2	100	546448.087432

SARA 311/312 Hazards: Chronic Health Hazard

SARA 313

Component(s) SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65: Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:

TSCA: On TSCA Inventory
DSL: All components of this product are on the Canadian DSL.
AUSTR: On the inventory, or in compliance with the inventory.
ENCS: On the inventory, or in compliance with the inventory.
KECL: On the inventory, or in compliance with the inventory.
PHIL: On the inventory, or in compliance with the inventory.
IECSC: On the inventory, or in compliance with the inventory.

Inventories:

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZloC (New Zealand), PICCS (Philippines), TSCA (USA)

16. OTHER INFORMATION

Full text of H-Statements referred to under Sections 2 and 3.

DATE ISSUED: 01/21/2016 DATE REVISED: 01/21/2016

OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. 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. 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

LC_{xx}: Lethal Concentration, for xx percent of test population

LD_{xx}: Lethal Dose, for xx percent of test population

IC_{xx}: Inhibitory Concentration for xx of a substance

EC_{xx}: 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

STEL: Short-term exposure limit

SDS: Safety Data Sheet

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

(WAF): water-accommodated fraction