



Organic Cationic Emulsion Solve 146

Material Safety Data Sheet

Date Issued: 10/01/2006

Date Revised: 09/26/2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **SOLVE 146**
CHEMICAL FAMILY: Liquid Cationic Polyacrylamide
Molecular Formula: Polymer
Molecular Weight: Polymer

COMPANY: **WaterSolve, LLC, 1791 Watermark Drive, Grand Rapids, MI 49546, USA**
For Product information call 616-575-8693.

EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call
CHEMTREC: 1-800-424-9300. Outside the USA and Canada call 703-527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA Regulated Components

Component	CAS NO.	%	OSHA (pel)	AGGIH (TLV)
Petroleum distillate	064742-47-8	20-25	500 ppm 1200mg/m ³	(skin)
Hydrotreated light Alcohols (C10-16)	68002-97-1	1.8-2.0	165ppm (Supplier) N/A	N/A

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance and odor: off-white liquid, hydrocarbon odor

Statement of Hazard: **WARNING!** Causes Skin Irritation; May cause Eye Irritation

Potential Health effects

Effects of exposure:

The estimated acute oral (rat) LD50, acute dermal (rabbit) LD50 and 4-hour inhalation (rat) LC50 values for this material are >5000mg/kg, >2000 mg/kg and >20 mg/L respective. Direct contact with this material may cause moderate skin and mild eye irritation. Refer to Section 11 for toxicology information on the regulated components of this product.

4. **FIRST AID MEASURES**

Ingestion:

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Skin Contact:

Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain of irritation persists after washing or if signs and symptoms of overexposure appear.

Eye Contact:

Rinse immediately with plenty of water for at least 15 minutes.

Inhalation:

Remove to fresh air. If breathing is difficult, give oxygen. Obtain medical advice if there are persistent symptoms

5. **FIRE FIGHTING MEASURES**

Suitable Extinguishing Media:

Use water spray, carbon dioxide or dry chemical.

Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (exposure Controls/Personal Protection)

Special Hazards:

Keep containers cool by spraying with water if exposed to fire.

6. **ACCIDENTAL RELEASE MEASURES**

Personal precautions:

Where exposure level is not known, wear NIOSH approved, positive pressure, self-contained respirator.

Where exposure level is known, wear NIOSH approved respirator suitable for level of exposure. In

addition to the protective clothing/equipment in Section 8, wear impervious boots.

Methods For Cleaning Up:

Products may cause a slip hazard. Spilled material should be absorbed onto an inert material and scooped up. Flush spill area with water. If slipperiness remains apply more dry-sweeping compound.

7. **HANDLING AND STORAGE**

Handling

Precautionary Measures: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Special Handling Statements: None

STORAGE

To avoid product degradation and equipment corrosion, do not use iron, copper or aluminum containers or equipment. Flashpoint determinations on materials of this type are required by certain regulations and scientific standards to be performed using a Pensky-Martens type closed cup test method. This method indicates a flash point greater than 93.3C (200F). Although there was no flashpoint detected below 93.3C (200F) by the Pensky-Martens Closed Tester method, some flammable vapors were evolved during the test as evidenced by the enlargement for the test flame; therefore, caution should be exercised during storage and handling..

Storage Temperature: Store at: Room Temperature
Reason : Integrity

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing.

Additional Advice :

Food, beverages and tobacco products should not be carried, stored or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	off white liquid; slight hydrocarbon
Boiling Point:	Aqueous phase~100°C ; Oil phase~175C
Melting Point:	Not applicable
Vapor Pressure:	Similar to water
Specific Gravity:	~1.0
Vapor Density:	similar to water
% Volatile (By Wt):	~50-60
pH:	3-6; (upon dilution in water)
Saturation in Air (% by Vol):	Not applicable
Evaporation Rate:	Not applicable
Solubility in Water:	Limited by viscosity
Volatile Organic Content:	~250 gm/L
Flash point:	>93°C 200°F closed cup
Flammable Limits (% by vol):	Not available
Autoignition temp:	Not available

Decomposition temp:	Not available
Odor Threshold	Not available
Partition coefficient (n-octanol/water)	Not available

10. **STABILITY AND REACTIVITY**

Stability:	Stable
Conditions to avoid:	Not known
Polymerization:	Will not occur
Conditions to Avoid:	None known
Materials to avoid:	Avoid contact with strong oxidizing agents

Hazardous decomposition
Products:

- carbon monoxide
- Carbon dioxide
- Ammonia
- Oxides of nitrogen
- Hydrogen chloride

11. **TOXICOLOGICAL INFORMATION**

Toxicological information for the product is found under Section 3.

Toxicological information on the OSHA regulated components of this product is as follows:

Alcohols (c10-16), ethoxylated toxicological properties have not been fully investigated. Based on similar materials, the acute oral (rat) LD50 is estimated to range from 1600-2500 mg/kg and the acute dermal (rabbit) LD50 value is estimated to be >2000mg/kg. Similar materials produced severe eye irritation and moderate skin irritation in studies with rabbits.

Citric acid has an oral (rat) LD50 value of 11,700 mg./kg. Direct contact may cause mild skin and severe eye irritation. Inhalation overexposure may cause respiratory tract irritation.

Petroleum distillates, hydrotreated light(CAS#64742-47-8) has acute oral (rat) and dermal (rabbit) LD50 values of >5 g/kg and >3.16 g/kg, respectively. Prolonged or repeated skin contact tends to remove skin oils, possibly leading to irritation and dermatitis. Direct contact may cause eye irritation. Overexposure to high vapor concentrations, >~700PPM, are irritating to the eyes and respiratory tract and may cause headaches, dizziness, drowsiness, and other central nervous system effects, including death. In a 90-day oral gavage (rats) study at 100, 500 and 1000 mg/kg, no treatment related mortalities were observed. There were no significant changes in body weights or food consumption in any dose groups. Increased liver weights were observed in male and female rats a 500 and 1000 mg/kg. Increased kidney weights were observed only in male rats at 500 and 1000mg/kg. Testes weights were significantly elevated in male rats at 1000 mg/kg. Kidney effects indicative of light hydrocarbon nephropathy, occurred in male rat kidneys at all dose levels. Histological findings of hepatocellular hypertrophy were seen in the livers of male rats at 1000mg/kg and in female rats at 500 and 1000 mg/kg. All treatment-related effects were reversible within the 4- week recovery period. Observed kidney effects (including light hydrocarbon nephropathy and increased kidney weight) are a unique response by male rats to chronic hydrocarbon exposure, which the U> S >EPA has declared no relevant to humans. High-dose liver effects (including hepatocellular, or enlarged liver cells) are a direct consequence of the sustained high-fat hydrocarbon diet. The No observed Adverse Effect Level (NOAEL) for this study was 1000mg/kg.

California Proposition 65 Warning (applicable in California only)- This product contains (a) chemical(s) known to the State of California to cause cancer .

12. ECOLOGICAL INFORMATION LC 50

No adverse environmental effects are expected with proper use and disposal of this product. LC50 determinations without added suspended solids overestimate the true toxicity of cationic polymers. Suspended solids and other dissolved organic materials like humic acid present in natural waters and reduce the effective concentration of the polymer and thereby its toxicity. This is not classified as dangerous for the environment. The effects on aquatic organisms are due to an external (non-systemic) mode of action, and are significantly reduce (by a factor of 7-20) within 30 minutes due to binding of the product to dissolved organic and inorganic sorbents such as clays and silts. All ecological information provided was conducted on a structurally similar product. Acute toxicity tests conducted on the polymer using environmentally representative water gave the following results:

Zebra Fish (Brachydanio rerio) 96 hr LC 50 >1-10 mg/l
Water Flea (Daphnia magna) 48hr EC 50 >10-100 mg/l

DEGRADATION

Test: CO2 Evolution: Modified Sturm (OECD 301B)

The polymeric ingredient is not readily biodegradable, but degradable by hydrolysis. The large polymer size is incompatible with transport across biological membranes and diffusion; the bioconcentration factor is therefore considered to be zero.

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as applied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA "listed hazardous waste" or has any of the four RCRA "hazardous waste characteristics." Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA "listed hazardous waste"; information contained in Section 15 of this MSDS is not intended to indicated if the product is a "listed hazardous waste." RCRA Hazardous Waste Characteristic. There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, See Section 5 of this MSDS (flash point). For Corrosivity, see sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations, may also apply to the classification of the material to be disposed. WaterSolve encourages the recycle, recovery and reuse of materials classified as RCRA hazardous wastes to be disposed of by thermal treatment or incineration at EPA approved facilities. WaterSolve has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

USDOT

Proper Shipping Name: Not applicable/Not regulated

Hazardous Substances: Not applicable

TRANSPORT CANADA

Proper Shipping Name: Not applicable/Not regulated

ICAO/IATA

Proper Shipping name: Not applicable/Not regulated
Packing instructions/maximum net quantity per package:
Passenger Aircraft:
Cargo Aircraft:

IMO

Proper shipping name: Not applicable/Not regulated

15. REGULATORY INFORMATION

INVENTORY INFORMATION

USA : All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical I inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL

European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances(AICA).

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese Inventory.

Japan: All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese Inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product. This product does not contain any components regulated under sections of the EPA.

Product Classification under section 311 of SARA
Acute (Y)

16. OTHER INFORMATION

NFPA HAZARD RATING (National Fire Protection Association)

Health 2- Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

Fire 1 – Materials that must be preheated before ignition can occur.

Reactivity 0 –Materials that in themselves are normally stable, even under fire exposure conditions.

REASON FOR ISSUE: New Format

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 WaterSolve, LLC, the information is accurate and reliable as of the date indicated but WaterSolve, LLC makes no express or implied warranty of merchantability for the material or the information. WaterSolve, LLC makes no express or implied warranty of fitness for a purpose for the material or for the information.

