Organic Anionic Flocculant
Solve 168

Material Safety Data Sheet

Date Issued: February 2000
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **SOLVE 168**
CHEMICAL TYPE: Modified Flocculant Polyacrylamide
COMPANY: WaterSolve, LLC, 4964 Starr ST. SE, , 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 708-527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA Regulated Components

Component	CAS NO.	%	TWA/Ceiling	REFERENCE
Sodium hydroxide	001310-73-2	1.0	2 mg/M3 (ceiling)	OSHA/ACGI
Ammonia	007664-41-7	1.4	35 ppm STEL	OSHAACGIH
			25 ppm	ACGIH

3. HAZARDS IDENTIFICATION

Emergency Overview
Appearance and odor: Clear, yellow, viscous liquid, strong odor of ammonia
Statement of Hazard: WARNING! Causes burns of eyes and skin

Potential Health effects
Effects of overexposure:
Acute oral (rat) and acute dermal (rabbit) LD50 values are >5,000 mg/kg, and > 2,000 mg/kg , respectively. The estimated 4-hour inhalation (rat) LC50 values for this material is >2,500 mg/l. Direct contact with this material may cause severe skin and eye irritation. Overexposure to vapor may cause respiratory tract irritation and eyes. Refer to section 11 for toxicology information on the OSHA regulated components of this product.

4. FIRST AID MEASURES

If swallowed, call a physician immediately. Only induce vomiting at the instructions of a physician. Never give anything by mouth to an unconscious person. In case of skin contact, remove contaminated clothing without delay. Flush skin thoroughly with water. Do not reuse clothing without laundering. In case of eye contact, immediately irrigate with plenty of water for 15 minutes. If vapor dust of this material is inhaled, remove from exposure. Administer oxygen if there is difficulty in breathing. Obtain medical attention immediately if necessary.

5. FIRE FIGHTING MEASURES

Flammable Properties

Flash point:	>392 ^{o}F, 200 ^{o}C (method: Pensky-Martens Closed Cup)
Flammable Limits (% by vol):	Not available
Autoignition temp:	Not available
Decomposition temp:	Not available

Extinguishing Media and Fire Fighting Instructions

Use water, carbon dioxide or dry chemical to extinguish fires.
Use water to keep containers cool.
Wear self-contained, positive pressure breathing apparatus.
See Section 8 (Exposure Controls/Personal Protection) for special clothing.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

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. Spilled material becomes very slippery when wet. Sweep up spills and place in a waste disposal container. Flush the area thoroughly with water and scrub to remove residue. If slipperiness remains, apply more dry-sweeping compound. Do not flush large quantities of the material to sewer.

7. HANDLING AND STORAGE

Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Spills should be scooped up or wiped up immediately, and the spill area flushed with water. To avoid product degradation and equipment corrosion, do not use iron, copper or aluminum containers or equipment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

Engineering controls are not usually necessary if good hygiene practices are followed. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. Avoid unnecessary skin contact. Impervious gloves are recommended to prevent prolonged skin contact. For operations where eye or face contact can occur, eye protection is recommended. Where exposures are below the Permissible Exposure Limit (PEL), no respiratory protection is required. Where exposures exceed the PEL, use respirator approved by NIOSH for the material and level of exposure. See “Guide to Industrial Respiratory Protection” (NIOSH).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Clear, yellow, viscous liquid; ammonia odor
Boiling Point:	>212 ^{o}F; 100 ^{o}C
Melting Point:	<32 ^{o}F; 0 ^{o}C
Vapor Pressure:	Similar to water
Specific Gravity:	approx. 1 g/ml
Vapor Density:	not available
% Volatile (By Wt):	74-80 (water)
pH:	12.5-13.5
Saturation in Air (% by Vol):	Not applicable
Evaporation Rate:	similar to water
Solubility in Water:	limited by viscosity

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions to avoid:	None known
Polymerization:	Will not occur
Conditions to Avoid:	None known
Incompatible Materials:	Strong oxidizing agents, acids, and heat. This material reacts slowly with iron, copper and aluminum, resulting in corrosion and product degradation.
Hazardous Decomposition Products:	Thermal decomposition or combustion may produce ammonia; oxides of carbon; nitrogen; oxides of sulfur (includes sulfur di- and tri-oxides) oxides of N_2.

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:
Acute overexposure to petroleum distillate vapors may cause eye and throat irritation. Certain petroleum distillate fractions may produce moderate to severe skin irritation with direct contact. Prolonged repeated exposure to petroleum distillate vapor may cause central nervous system damage as well as heart and blood disorders.

The oral LD50 in the rat for various distillates ranges from 4.5 to greater than 25 ml/kg, and the inhalation LC50 in rats is about 15,000 ppm. Aspiration of petroleum distillate may cause chemical pneumonitis. Overexposure to vapor may cause dizziness, drowsiness, headache, and nausea.
Sodium hydroxide can produce irreversible damage to eyes and skin. Ammonia vapor can cause respiratory tract and eye irritation. Direct contact with ammonia solutions causes irreversible eye damage, mucous membrane swelling and skin burns. The LC50 in rats by inhalation after 1-hour exposure is 7,338 ppm (1.27 mg/l). Single dose oral administration of ammonia solution to rats at 350 mg/kg produced not toxic effects.

Ammonia vapor can cause respiratory tract and eye irritation. Direct contact with ammonia solutions causes irreversible eye damage, mucous membrane swelling and skin burns. The LC50 in rats by inhalation after 1-hour exposure is 7,338 ppm (1.27 mg/l). Single dose oral administration of ammonia solution to rats at 350 mg/kg produced no toxic effects.
This product contains (a) chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm.

12. ECOLOGICAL INFORMATION LC50

No aquatic LC50, BOD, or COD data available

Octanol/$H_2$0 Partition Coefficient:
Not Available

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.

	D.O.T. SHIPPING INFORMATION		IMO SHIPPING INFORMATION
SHIPPING NAME:	Caustic Alkali Liquid, N.O.S.		Caustic Alkali Liquid, N.O.S.
HAZARD CLASS/	8		8
PACKING GROUP:	II		II
UN NUMBER:	UN1719		1719
IMDG PAGE:	N.A.		8136
D.O.T. HAZARDOUS SUBSTANCE:	Ammonia (7,143 lbs)		N.A.
TRANSPORT LABEL REQUIRED:	Corrosive		Corrosive
	ICAO/IATA		TRANSPORT CANADA
SHIPPING NAME:	Caustic Alkali Liquid, N.O.S.		Caustic Alkali Liquid, N.O.S.
HAZARD CLASS:	8		8
SUBSIDIARY CLASS:	_		-
UN/ID NUMBER:	1719		1719
PACKING GROUP:	II		II
TRANSPORT LABEL REQUIRED:	Corrosive		Corrosive
PACKING INSTR:	PASSENGER	809	N.A.
	CARGO	813	
MAX NET QTY:	PASSENGER	1L	N.A.
	CARGO	30L	

ADDITIONAL TRANSPORT INFORMATION

TECHNICAL NAME (N.O.S.):	(Contains sodium hydroxide and ammonia)
Comments:	DOT – Not regulated if less than Reportable Quantity (RQ) per package.

15. REGULATORY INFORMATION

INVENTORY INFORMATION

US TSCA:	This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. Seq.
CANADA DSL:	Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included on the Domestic Substances List.
EEC EINECS:	All components of this product are included in the European Inventory

of Existing Chemical Substances (EINECS) or are polymers of which the components are in EINECS, inc compliance with Council Directive 67/548/EEC and its amendments.

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 waste classification and waste disposal of this product.

COMPONENT	CAS NO.	%	TPQ(lbs)	RQ(lbs)	S313	TSCA 12B
Sodium hydroxide	001310-73-2	1.0	None	1000	No	No
Ammonia	007664-41-7	1.4	100	100	Yes	No

Product Classification under section 311 of SARA
Acute (Y) Chronic (N) Fire (N) Reactive (N) Pressure (N)

16. OTHER INFORMATION

NFPA HAZARD RATING (National Fire Protection Association)

Fire 1
Health 3
0 Reactivity
Special

Fire: Materials that must be preheated before ignition can occur
Health: Materials, which on exposure under fire conditions, would offer no hazard beyond that of ordinary combustible material.
Reactivity: Materials, which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

REASON FOR ISSUE:

Area Code Change