

HP-2811

MATERIAL SAFETY DATA SHEET

24 HR. EMERGENCY CONTACT (CHEM TEL) US Tel: 1- 800 - 255-3924

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER: One AquaSource, Inc.
P.O. Box 207
Waterville, OH 43566
Phone: 888-777-9555

PRODUCT NAME: HP-2811
PRODUCT DESCRIPTION: Anionic polyacrylamide in water-in-oil emulsion
CHEMICAL FAMILY: Anionic polyacrylamide
MOLECULAR FORMULA: Mixture
INTENDED/RECOMMENDED USE: Stimulation / Cementing Additive
MSDS REVISION DATE: 11/13/2013

2.COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	% (w/w)	OSHA (PEL): ACGIH (TLV) Carcinogen		
		No OSHA limits;	(hud)	-
Petroleum distillate hydrotreated light 64742-47-8	~20 – 28	Recommend: TWA 1200 mg/m ³ (165 ppm) for vapor.		
Ammonium chloride 12125-02-9	10 – 13	10 mg/m ³ Fume. (TWA) 20 mg/m ³ (STEL)	10 mg/m ³ fume (TWA) 20 mg/m ³ fume (STEL)	-
Product contains one or more Of the following ethoxylated Alcohols at maximum total Concentration of: -	3.1	-	-	-
C12-C14 Alcohol ethoxylated 68439-50-9	~0 – 3.1	Not established	Not established	
Alcohols (C12-16) ethoxylated 68551-12-2	~0 – 3.1	Not established	Not established	
Alcohols (C10-16) ethoxylated 68002-97-1	~0 – 3.1	Not established	Not	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE AND ODOR:

Color:	white
Appearance:	viscous liquid
Odor:	hydrocarbon

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STATEMENTS OF HAZARD:

WARNING! CAUSES SKIN IRRITATION
MAY CAUSE EYE IRRITATION

POTENTIAL HEALTH EFFECTS: EFFECTS OF EXPOSURE:

The 4-hour inhalation (rat) LC50 value is estimated to be >20 mg/l. The acute oral (rat) LD50 and dermal (rabbit) LD50 values are >10000 mg/kg and >10000 mg/kg, respectively. Refer to Section 11 for toxicology information on the regulated components of this product. Minimal eye irritation was produced in rabbit testing. When this product was tested in rabbits for skin irritation under occlusive conditions, as would be produced if the product was spilled into boots, irreversible skin damage was produced. When the product was tested under non-occlusive conditions with 24 hours of skin contact, as would occur when product was spilled on clothing, some eschar formation was observed but the overall skin irritation score was lower (2.2 moderately irritating).

4. FIRST AID MEASURES

INGESTION:

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

SKIN CONTACT:

Do not reuse contaminated clothing without laundering. Wash immediately with plenty of water. Remove contaminated clothing and shoes without delay. Get medical attention if pain or 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:

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

Special Hazards:

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

Mechanical/Static Sensitivity Statements:

None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Where exposure level is not known, wear approved, positive pressure, self-contained respirator. Where exposure level is known, wear approved respirator suitable for level of exposure. In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

Methods for cleaning up:

Spilled material should be absorbed onto an inert material and scooped up. Flush spill area with water. Product may cause a slip hazard. 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 93.3 C (200 F). Although there was no

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flashpoint detected below 93.3 C (200 F) by the Pensky-Martens Closed Tester method, some flammable vapors were evolved during the test as evidenced by the enlargement of the test flame; therefore, caution should be exercised during storage and handling.

Storage Temperature: Store at 5 - 27°C, 41 – 80.6°F

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:

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

SKIN PROTECTION:

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

Additional Advice:

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	white
Appearance:	viscous liquid
Odor:	hydrocarbon
Boiling Point:	Aqueous phase ~ 212 F; Oil phase ~ 347 F
Freezing Point:	-35°F
Vapor Pressure:	Not Available
Specific Gravity/Density:	~1.0
Vapor Density:	Similar to water
Percent Volatile (% by wt.):	58 -70
pH:	6 – 8 (upon dilution in water)
Saturation in Air (% by Vol.):	Not available
Evaporation Rate:	<1 (Butyl acetate = 1)
Solubility in Water:	Limited by viscosity
Volatile Organic Content:	Not available
Flash Point:	200°F
Flammable Limits (%by Vol):	Not available
Autoignition Temperature:	Not available
Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available

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10. STABILITY AND REACTIVITY DATA

Stability:	Stable
Conditions To Avoid:	None known
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	This material reacts slowly with iron, copper and aluminum, resulting in corrosion and product degradation. Strong oxidizing agents.
Hazardous Decomposition Products:	Ammonia (NH ₃) Carbon dioxide Carbon monoxide (CO) Oxides of nitrogen

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.
Toxicological information on the regulated components of this product is as follows:

The acute oral (rat) and dermal (rabbit) LD₅₀ values for ammonium chloride are 1650 mg/kg and >2000 mg/kg, respectively. Direct contact with ammonium chloride may cause mild eye and skin irritation. Inhalation overexposure to ammonium chloride vapors can cause irritation to the eyes, nose, and throat.

Petroleum distillates, hydrotreated light (CAS# 64742-47-8) has acute oral (rat) and dermal (rabbit) LD₅₀ values of >5g/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, >~700 ppm, are irritating to the eyes and respiratory tract and may cause headaches, dizziness, drowsiness, and other central nervous system effects, including death. Aspiration of minute amounts during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death. In a 90-day oral gavage (rats) study at 100, 500, or 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 at 500 and 1000 mg/kg. Increased kidney weights were observed only in male rats at 500 and 1000 mg/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 1000 mg/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 'not relevant to humans'. High-dose liver effects (including hepatocellular hypertrophy, 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 1000 mg/kg.

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 >2000 mg/kg. Similar materials produced severe eye irritation and moderate skin irritation in studies with rabbits.

C12-14 alcohol ethoxylated toxicological properties have not been fully investigated. The oral LD₅₀ (rat) of this mixture is expected to be consistent with the chemical family of ethoxylated alcohol surfactants, and range from 1.6 to 2.5 g/kg. The acute dermal (rabbit) LD₅₀ value is estimated to be > 2.0 g/kg. One expected component of this mixture was severely irritating to rabbit eyes (undiluted, Draize score = 60). This mixture is expected to be moderately irritating to skin, based on data reported for C9-C11 6EO: (primary irritation index) PII = 5.3/8

Alcohols (C12 -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 >2000 mg/kg. Similar materials produced severe eye irritation and moderate skin irritation in studies with rabbits.

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

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12. ECOLOGICAL INFORMATION

All ecological information provided was conducted on a structurally similar product.

This material is not classified as dangerous for the environment.

Acute toxicity tests conducted on the polymer using environmentally representative water gave the following results:

ALGAE TEST RESULTS

Test: Growth Inhibition (OECD 201)

Duration: 72 hr.

Species: Green Algae (*Selenastrum capricornutum*) >100 mg/l IC50

FISH TEST RESULTS

Test: Acute toxicity, freshwater (OECD 203)

Duration: 96 hr.

Species: Bluegill Sunfish (*Lepomis macrochirus*) Zebra Fish (*Brachydanio rerio*) >100 mg/l LC50

INVERTEBRATE TEST RESULTS

Test: Acute Immobilization (OECD 202)

Duration: 48 hr.

Species: Water Flea (*Daphnia magna*) >100 mg/l EC50

DEGRADATION

Test: CO2 Evolution: Modified Sturm (OECD 301B). The large polymer size is incompatible with transport across biological Membranes and diffusion; the bioconcentration factor is therefore considered to be zero. The polymeric ingredients are not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. 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 indicate if the product is a 'listed hazardous waste.' 'RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 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).

14. TRANSPORTATION INFORMATION

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

US DOT

Proper Shipping Name: Not applicable/Not regulated

Hazardous Substances:

Not applicable

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15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical 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 these sections of the EPA

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- **Acute**

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 1 – Materials that, under emergency conditions, can cause significant irritation.

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.

THIS PRODUCT'S HEALTH AND SAFETY INFORMATION IS PROVIDED TO ASSIST OUR CUSTOMERS IN ASSESSING COMPLIANCE WITH HEALTH, SAFETY AND ENVIRONMENTAL REGULATIONS. THE INFORMATION CONTAINED HEREIN IS BASED ON DATA AVAILABLE TO US, AND IS BELIEVED TO BE ACCURATE, ALTHOUGH NO GUARANTEE OR WARRANTY IS PROVIDED OR IMPLIED BY THE COMPANY IN THIS RESPECT. SINCE THE USE OF THIS PRODUCT IS WITHIN THE EXCLUSIVE CONTROL OF THE USER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE CONDITIONS OF SAFE USE. SUCH CONDITIONS MUST COMPLY WITH ALL GOVERNMENTAL REGULATIONS.