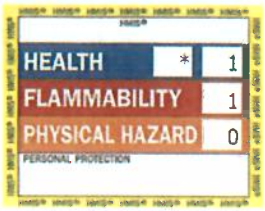
CLEARWATER™
Engineered Chemistry

Material Safety Data Sheet

SC-900



1. Product and Company Identification

Material name	**SC-900**
Patent Number	Not available
Revision date	September-29-2009
Version No.	2
CAS #	Mixture
Product use	Shale Stabilizer
Manufacturer information	Clearwater™ International L.L.C. 4420 South Flores Road Elmendorf, TX 78112 US CHEMTREC 1-800-424-9300/703-527-3887
Emergency	CHEMTREC 1-800-424-9300/703-527-3887
Supplier information	Clearwater™ International L.L.C. 100 Leetsdale Industrial Drive Leetsdale, PA 15056 US
Supplier emergency telephone number(s)	CHEMTREC 1-800-424-9300/703-527-3887

2. Hazards Identification

Emergency overview	WARNING May be ignited by heat, sparks or flames. Harmful in contact with eyes. Prolonged exposure may cause chronic effects. This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Do not get this material in contact with skin or eyes. Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Eyes	Contact may irritate or burn eyes. Do not get this material in contact with eyes.
Skin	Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Do not get this material in contact with skin.
Inhalation	Prolonged inhalation may be harmful. Do not breathe dust/fume/gas/mist/vapors/spray.
Ingestion	Harmful if swallowed. Do not ingest. May cause delayed lung damage. Components of the product may be absorbed into the body by ingestion.
Target organs	Central nervous system. Eyes. Lungs. Respiratory system. Skin.

Chronic effects	Shortness of breath. Conjunctiva. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. May cause delayed lung damage. Prolonged skin contact may defat the skin and produce dermatitis.
Signs and symptoms	Discomfort in the chest. Shortness of breath. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Cough. Conjunctivitis. Defatting of the skin. Rash. Irritation.
Potential environmental effects	Components of this product are hazardous to aquatic life. May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Ethylene Glycol	107-21-1	15 - 40
Ammonium chloride	12125-02-9	3 - 7

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes.
Skin contact	Immediately flush skin with plenty of water. Get medical attention if irritation develops or persists.
Inhalation	Move to fresh air. Get medical attention immediately.
Ingestion	Have victim rinse mouth thoroughly with water. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention immediately.
Notes to physician	Symptoms may be delayed.
General advice	Call a physician if symptoms develop or persist. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Extinguishing media

Suitable extinguishing media	Water. Water spray. Water fog. Alcohol foam. Polymer foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.

Protection of firefighters

Protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Move containers from fire area if you can do it without risk. Do not scatter spilled material with high pressure water streams. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out.

CLEARWATER™
Engineered Chemistry

6. Accidental Release Measures

Personal precautions
Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unnecessary personnel away. Stay upwind. Keep out of low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment
Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewers, basements or confined areas.

Methods for cleaning up
Should not be released into the environment.

Large Spills: Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. After removal flush contaminated area thoroughly with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

Never return spills in original containers for re-use.

Other information
Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling
Do not breathe vapors or spray mist. Use only with adequate ventilation. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid release to the environment. Wash thoroughly after handling. Avoid prolonged exposure.

Storage
Use care in handling/storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in accordance with local/regional/national/international regulation.

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH

Components	CAS #	TWA	STEL	Ceiling
Ethylene Glycol	107-21-1	Not established	Not established	100 mg/m3
Ammonium chloride	12125-02-9	10 mg/m3	20 mg/m3	Not established

Engineering controls
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal protective equipment

Eye / face protection
Do not get this material in contact with eyes. Wear chemical goggles. Wear safety glasses with side shields.

Skin protection
Do not get this material in contact with skin. Protective gloves. Wear suitable protective clothing. Closed-toe shoes recommended.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygeine considerations	Do not get this material in contact with eyes. Do not get this material in contact with skin. When using do not eat or drink. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Clear
Color	Colorless - light yellow
Odor	slightly Ammoniacal
Odor threshold	Not available
Physical state	Liquid.
Form	Liquid.
pH	7 - 8.5 neat
Melting point	-10 °F (-23.3 °C)
Freezing point	Not available
Boiling point	206.6 °F (97.13 °C) estimated
Flash point	> 201 °F (> 93.9 °C)
Evaporation rate	Not available
Flammability	Not available.
Flammability limits in air, upper, % by volume	Not available
Flammability limits in air, lower, % by volume	Not available
Vapor pressure	Not available
Vapor density	Not available
Specific gravity	1.05 - 1.08
Relative density	1.0649 g/cm3 estimated
Solubility (water)	Not available
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available
Decomposition temperature	Not available
VOC	22.99 % estimated
Viscosity	500 - 900 cps

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Caustics.

11. Toxicological Information

Acute effects	Acute LD50: 14500 mg/kg estimated, Rat, Oral

Component analysis - LD50

Toxicology Data - Selected LD50s and LC50s

Ammonium chloride	12125-02-9	Oral LD50 Rat: 1410 mg/kg
Ethylene Glycol	107-21-1	Oral LD50 Rat: 4000 mg/kg; Dermal LD50 Rabbit:9530 µL/kg

Sensitization Not expected to be hazardous by OSHA criteria.

Local effects Contact may irritate or burn eyes. Components of the product may be absorbed into the body through the skin.

Chronic effects Hazardous by OSHA criteria. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects.

Carcinogenicity Not expected to be hazardous by OSHA criteria.

ACGIH - Threshold Limit Values - Carcinogens

Ethylene Glycol	107-21-1	A4 - Not Classifiable as a Human Carcinogen

Neurological effects Hazardous by OSHA criteria.

Epidemiology Hazardous by OSHA criteria.

Further information Symptoms may be delayed.

12. Ecological Information

Ecotoxicity Components of this product are hazardous to aquatic life.

Ecotoxicity - Freshwater Algae Data

Ethylene Glycol	107-21-1	96 Hr EC50 Selenastrum capricornutum: 6500-1300 mg/L

Ecotoxicity - Freshwater Fish Species Data

Ammonium chloride	12125-02-9	24 Hr LC50 Lepomis macrochirus: 725 mg/L; 96 Hr LC50 Cyprinus carpio:209 mg/L [static]
Ethylene Glycol	107-21-1	96 Hr LC50 Oncorhynchus mykiss: 41000 mg/L; 96 Hr LC50 Lepomis macrochirus: 27500 mg/L; 96 Hr LC50 Oncorhynchus mykiss: 40761 mg/L [static]; 96 Hr LC50 Pimephales promelas: 49000 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 16000 mg/L [static]

Ecotoxicity - Microtox Data

Ethylene Glycol	107-21-1	30 min EC50 Photobacterium phosphoreum: 620.0 mg/L; 30 min EC50 Photobacterium phosphoreum: 620 mg/L; 16 Hr EC50 Pseudomonas putida: 10000 mg/L

Ecotoxicity - Water Flea Data

Ammonium chloride	12125-02-9	24 Hr EC50 water flea: 202 mg/L
Ethylene Glycol	107-21-1	48 Hr EC50 water flea: 46300 mg/L

Environmental effects Harmful to aquatic life.

Ecotoxicity - Freshwater Algae Data

Ethylene Glycol	107-21-1	96 Hr EC50 Selenastrum capricornutum: 6500-1300 mg/L

Ecotoxicity - Freshwater Fish Species Data

Ammonium chloride	12125-02-9	24 Hr LC50 Lepomis macrochirus: 725 mg/L; 96 Hr LC50 Cyprinus carpio:209 mg/L [static]
Ethylene Glycol	107-21-1	96 Hr LC50 Oncorhynchus mykiss: 41000 mg/L; 96 Hr LC50 Lepomis macrochirus: 27500 mg/L; 96 Hr LC50 Oncorhynchus mykiss: 40761 mg/L [static]; 96 Hr LC50 Pimephales promelas: 49000 mg/L [static]; 96 Hr LC50 Poecilia reticulata: 16000 mg/L [static]

Ecotoxicity - Microtox Data

Ethylene Glycol	107-21-1	30 min EC50 Photobacterium phosphoreum: 620.0 mg/L; 30 min EC50 Photobacterium phosphoreum: 620 mg/L; 16 Hr EC50 Pseudomonas putida: 10000 mg/L

Ecotoxicity - Water Flea Data

Ammonium chloride	12125-02-9	24 Hr EC50 water flea: 202 mg/L
Ethylene Glycol	107-21-1	48 Hr EC50 water flea: 46300 mg/L

13. Disposal Considerations

Disposal instructions Do not allow this material to drain into sewers/water supplies. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Not regulated as hazardous goods.

Department of Transportation (DOT) Requirements

Bulk

Not regulated as hazardous goods.

Department of Transportation (DOT) Requirements

Not regulated as dangerous goods.

Canadian Transportation of Dangerous Goods (TDG) Requirements

Not regulated as hazardous goods.

IMDG

Not regulated as hazardous goods.

IATA

Not regulated as hazardous goods.

15. Regulatory Information

Labelling

Contains Ammonium chloride, Ethylene Glycol

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

Ethylene Glycol	107-21-1	1.0 % de minimis concentration

U.S. - FDA - Food Additives Generally Recognized as Safe (GRAS)

Ammonium chloride	12125-02-9	21 CFR 184.1138

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical Yes

CERCLA (Superfund) reportable quantity

Ethylene Glycol: 5000.0000
Ammonium chloride: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance No

Section 311 hazardous chemical Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

International regulations

Canada - WHMIS - Ingredient Disclosure List

Ammonium chloride	12125-02-9	1 %
Ethylene Glycol	107-21-1	1 %

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

U.S. - Massachusetts - Right To Know List

Ammonium chloride	12125-02-9	Present
Ethylene Glycol	107-21-1	Present

U.S. - Minnesota - Hazardous Substance List

Ammonium chloride	12125-02-9	Present (fume)
Ethylene Glycol	107-21-1	Present (particulate and vapor)

U.S. - New Jersey - Right to Know Hazardous Substance List

Ammonium chloride	12125-02-9	sn 0093
Ethylene Glycol	107-21-1	sn 0878

U.S. - Pennsylvania - RTK (Right to Know) List

Ammonium chloride	12125-02-9	Environmental hazard
Ethylene Glycol	107-21-1	Environmental hazard

U.S. - Rhode Island - Hazardous Substance List

Ammonium chloride	12125-02-9	Toxic (fume); Flammable (fume)
Ethylene Glycol	107-21-1	Toxic; Flammable

U.S. - Texas - Effects Screening Levels - Long Term

Ammonium chloride	12125-02-9	10 µg/m3 ESL (fume)
Ethylene Glycol	107-21-1	10 ppb ESL (46% Ethylene glycol); 26 µg/m3 ESL (46% Ethylene glycol)

U.S. - Texas - Effects Screening Levels - Short Term

Ammonium chloride	12125-02-9	100 µg/m3 ESL (fume)
Ethylene Glycol	107-21-1	100 ppb ESL (46% ethylene glycol); 260 µg/m3 ESL (46% ethylene glycol)

16. Other Information

HMIS® ratings
Health: 1*
Flammability: 1
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 1
Instability: 0

Prepared by
Naser S. Hussaini
515 Post Oak Blvd
Houston, TX 77027
+1-713-968-3211

Disclaimer
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.

Issue date September-29-2009

MSDS sections updated This document has undergone significant changes and should be reviewed in its entirety.