

I. Chemical Product and Company Identification

Product Name: Bulk Sand
 Identification #: 35-5xx-xxxx
 Product Use/Class: Bulk Sand
 Supplier: Superior Well Services
 Manufacturer: Southern Filter Media, Inc.
 Emergency Contact: CHEMTREC 1 (800) 424-9300
 Prepared By: RAA
 Date Prepared: 02/15/2008

II. Composition/Information on Ingredients

Chemical Name: Crystalline Silica (in the form of quartz)
 CAS Number: 14808-60-7
 Percent by Mass Less Than: 87-99.9%

Exposure Limits

Threshold Limit Value - Time Weighted Average: .05 mg/m³ respirable
 Threshold Limit Value - Short Term Exposure Limit: NI
 Permissible Exposure Limit - Time Weighted Average: 10 mg/m³/(%SiO₂+2) r
 Permissible Exposure Limit - Ceiling: NI
 Company Threshold Limit - Time Weighted Average: NI
 Skin: NI

III. Hazardous Identification

Effects of Overexposure	Emergency Overview:	Lung injury and cancer hazard. Do not breath dust. May cause delayed lung injury. Long term exposure can cause silicosis.
	Eye Contact:	May cause eye irritation and possible injury.
	Skin Contact:	No adverse effects anticipated.
	Inhalation:	Lung injury and cancer hazard. Do not breath dust. May cause delayed lung injury. Long term exposure can cause silicosis.
	Ingestion:	No adverse effects anticipated.
	Chronic Harards:	Lung injury and cancer hazard. Do not breath dust. May cause delayed lung injury. Long term exposure can cause silicosis.

Primary Route(s) of Entry:	<input type="checkbox"/> Skin Contact	<input checked="" type="checkbox"/> Eye Contact	<input type="checkbox"/> Ingestion
	<input type="checkbox"/> Skin Absorbtion	<input checked="" type="checkbox"/> Inhalation	

IV. First Aid Measures

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention if irritation persists.
Skin Contact:	No first aid needed.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Get prompt medical attention!
Ingestion:	If large amount swallowed, DO NOT induce vomiting. Get medical attention IMMEDIATELY.

V. Fire Fighting Measures

Flash Point:	Non-flammable
Auto Ignition Temperature:	NA
Lower Explosive Temp.:	NA
Upper Explosive Temp.:	NA
Extinguishing Media:	Use media suitable for surrounding material.
Unusual Fire and Explosive Harards:	None expected.
Special Fire Fighting Procedures:	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. Use water to keep containers cool.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Wear appropriate protective equipment. If uncontaminated, collect using dustless method and place in appropriate container for use. If contaminated: a) use appropriate method for the nature of the contamination, and b) consider possible toxic or fire hazards associated with the contaminating substances. Collect for appropriate disposal.
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VII. Handling and Storage

Handling:	Do not breath dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a dust cloud. Avoid creation of respriable dust. Do not use a dry abrasive blasting agent, this is prohibited.
Storage:	Use good houskeeping in storage and use ares to prevent accumulation of dust in work area. Use adequate ventilation and dust collection.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Local exhaust and ventilation is necessary.
Respiratory Protection:	A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive air supply respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.
Skin Protection:	Wear impervious gloves, shoes, and protective clothing to prevent skin contact.
Eye Protection:	Wear safety goggles or glasses as appropriate for the job.
Other Protective Equipment:	None anticipated.
Hygienic Practices:	Wash thoroughly after handling. Remove dusty clothing and wash before reuse. Avoid breathing dust.

IX. Physical and Chemical Properties

Boiling Point:	Boiling point = 4046 F	Vapor Density:	NA
Odor:	odorless	Odor Threshold:	NA
Appearance:	White to tan fine granules	Evaporation Rate:	None.
Solubility in H2O:	Negligible	Specific Gravity:	2.65
Freeze Point:	NI	pH at 50.0%:	6-7.5
Vapor Pressure:	NA	Viscosity:	NI
Physical State:	Solid		
Coefficient of Water Oil Distribution:	NI		

X. Stability and Reactivity

Conditions to Avoid:	Avoid temperature extremes, and incompatibles.
Incompatibility:	Powerful oxidizing agents, hydrofluoric acid, strong alkalis, metallic oxides.
Hazardous Decomposition Products:	Silica will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride. When exposed to high temperatures, may change crystalline structure to form tridymite (above 870C) or Cristobalite (above 1470C) which pose greater health hazards than quartz.
Hazardous Polymerization:	Will not occur.
Stability:	Stable

XI. Toxicological Properties

Toxicological Properties:	IARC and the National Toxicology Program have determined that there is sufficient evidence in humans for the carcinogenicity of inhaled crystalline silica in the form of quartz or cristobalite. Among individuals with silicosis, lung cancer occurs more frequently in those who smoke.
Oral:	No product information is available.
Dermal:	No product information is available.
Inhalation:	TClo: 16mppcf/8hr/17.9yrs LClo: 300mgs/m3/10yrs

XII. Ecological Information

Ecological Properties: May be toxic to marine life.
Ecotoxicity: Aquatic Toxicity Rating
TLm 96: over 1000 ppm
Chemical Fate Information: No product information is available.

XIII. Disposal Consideration

Disposal Method: Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
RCRA Status: Not classified a hazardous waste.

XIV. Transportation Information

DOT Proper Shipping Name: Not DOT Regulated
DOT Technical Name:
DOT Hazard Class:
DOT Hazard Subclass:
DOT UN/NA Number:
Packing Group:
Resp. Guide Page:

XV. Regulatory Information

OSHA: No OSHA information listed.
TSCA Status: No information
CERCLA SARA: No Information
SARA Section 313
Required Reporting:

XVI. Other Information

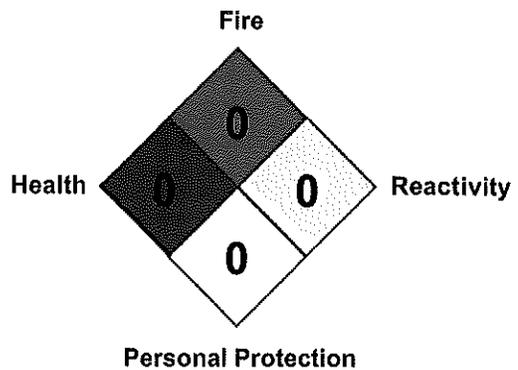
Other Information: NA = Not applicable ND = Not Determined NI = No Information NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.



HMIS Hazard Rating:

- 4 = Severe
- 3 = Serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimal



I. Chemical Product and Company Identification

Product Name: Nitrogen (Compressed)
Identification #: -----
Product Use/Class: Shop Product
Supplier: Superior Well Services
Supplier Tracking Code: 126
Emergency Contact: CHEMTREC 1 (800) 424-9300
Prepared By: RAA
Date Prepared: 04/16/2008

II. Composition/Information on Ingredients

Chemical Name: Nitrogen
CAS Number: 7727-37-9
Percent by Mass Less Than: 99

Exposure Limits

Threshold Limit Value - Time Weighted Average: NI
Threshold Limit Value - Short Term Exposure Limit: NI
Permissible Exposure Limit - Time Weighted Average: NI
Permissible Exposure Limit - Ceiling: NI
Company Threshold Limit - Time Weighted Average: NI
Skin: NI

III. Hazardous Identification

Effects of Overexposure	Emergency Overview:	Nitrogen is a nontoxic, odorless, colorless, nonflammable compressed gas stored in cylinders at high pressure. It can cause rapid suffocation when concentrations are sufficient to reduce oxygen levels below 19.5%. Self-contained breathing apparatus (SCBA) may be required.
	Eye Contact:	No adverse effect.
	Skin Contact:	No adverse effect.
	Inhalation:	Simple asphyxiant. Nitrogen is nontoxic, but may cause suffocation by displacing the oxygen in air. Lack of sufficient oxygen can cause serious injury or death. Exposure to an oxygen deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help themselves.
	Ingestion:	N/A
	Chronic Harards:	No Information

Primary Route(s) of Entry:	<input type="checkbox"/> Skin Contact	<input type="checkbox"/> Eye Contact	<input type="checkbox"/> Ingestion
	<input type="checkbox"/> Skin Absorbtion	<input checked="" type="checkbox"/> Inhalation	

IV. First Aid Measures

Eye Contact:	N/A
Skin Contact:	N/A
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	N/A

V. Fire Fighting Measures

Flash Point:	N/A
Auto Ignition Temperature:	N/A
Lower Explosive Temp.:	N/A
Upper Explosive Temp.:	N/A
Extinguishing Media:	Use suitable media for surrounding material.
Unusual Fire and Explosive Harards:	Upon exposure to intense heat or flame, cylinder may vent rapidly and/or rupture violently. Most cylinders are designed to vent contents when exposed to elevated temperatures. Pressure in a container can build up due to heat and it may rupture if pressure relief devices should fail to function.
Special Fire Fighting Procedures:	Nitrogen is a simple asphyxiant. If possible, remove nitrogen cylinders from fire area or cool with water. SCBA may be required by rescue workers.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Evacuate all personnel from affected area. Increase ventilation to release area and monitor oxygen level. Use appropriate protective equipment (SCBA). If leak is from container or its valve, call the Air Products emergency telephone number. If leak is in user's system, close cylinder valve and vent pressure before attempting repairs.
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VII. Handling and Storage

Handling:	Do not drag, roll, or slide cylinder. Use a suitable handtruck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times when in use. Use a pressure reducing regulator or separate control valve to safely discharge gas from cylinder. Use a check valve to prevent reverse flow into cylinder. Do not overheat cylinder to increase pressure or discharge rate. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing leak to occur. Use a special cap wrench or adjustable strap-wrench to remove over-tight or rusted caps. --- Nitrogen is compatible with all common materials of construction. Pressure requirements should be considered when selecting materials and designing system.
Storage:	Cylinders should be stored upright in a well ventilated, secure area, protected from the weather. Storage area temperatures should not exceed 125F and area should be free of combustible materials. Storage should be away from heavily traveled areas and emergency exits. Avoid areas where salt or other corrosive materials are present. Valve protection caps and valve outlet seals should remain on cylinders not connected for use. Separate full from empty cylinders. Avoid excessive inventory and storage time. Use a first-in first-out system. Keep good inventory records.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Provide good ventilation and/or local exhaust to prevent accumulation of high concentrations of gas. Oxygen levels in work area should be monitored to ensure that they do not fall below 19.5%.
Respiratory Protection:	None required for general use. In an emergency, use SCBA or positive pressure air line with mask and escape pack in areas where oxygen concentration is <19.5%. Air purifying respirators will provide protection.
Skin Protection:	Safety shoes and leather work gloves are recommended when handling cylinders.
Eye Protection:	Safety glasses.
Other Protective Equipment:	No Information
Hygienic Practices:	No Information

IX. Physical and Chemical Properties

Boiling Point:	-320.4 F	Vapor Density:	at 70F and 1 Atm: 0.072 lbs/ft3
Odor:	odorless	Odor Threshold:	N/A
Appearance:	Colorless gas	Evaporation Rate:	No Information
Solubility in H2O:	Vol/Vol @ 32F: 0.023	Specific Gravity:	0.967
Freeze Point:	-345.8F	pH at 50.0%:	No Information
Vapor Pressure:	N/A	Viscosity:	No Information
Physical State:	Gas		
Coefficient of Water Oil Distribution:	No Information		

X. Stability and Reactivity

Conditions to Avoid:	None known.
Incompatibility:	None currently known.
Hazardous Decomposition Products:	None currently known
Hazardous Polymerization:	Will not occur under normal conditions.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties: Nitrogen is a simple asphyxiant.
Oral: No product information is available.
Dermal: No product information is available.
Inhalation: No product information is available.

XII. Ecological Information

Ecological Properties: The atmosphere contains approximately 78% nitrogen. No adverse ecological effects expected. Nitrogen does not contain any Class I or Class II ozone depleting chemicals. Nitrogen is not listed as a marine pollutant.
Ecotoxicity: No product information is available.
Chemical Fate Information: No product information is available.

XIII. Disposal Consideration

Disposal Method: Unused product/empty container: Return cylinder and unused product to supplier. Do not attempt to dispose of residual or unused quantities. For emergency disposal, secure the cylinder and slowly discharge gas to the atmosphere in a well ventilated area or outdoors.
RCRA Status: No product information is available.

XIV. Transportation Information

DOT Proper Shipping Name: Nitrogen, compressed
DOT Technical Name:
DOT Hazard Class: 2.2
DOT Hazard Subclass:
DOT UN/NA Number: UN1066
Packing Group:
Resp. Guide Page:

XV. Regulatory Information

OSHA: Non-hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)
TSCA Status: No product information is available.
CERCLA SARA: No product information is available.
SARA Section 313
Required Reporting:

XVI. Other Information

Other Information: NA = Not applicable ND = Not Determined NI = No Information NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.



1380 Route 286
Suite 121
Indiana, PA 15701

Clay Treat LT

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **Clay Treat LT**
CHEMICAL DESCRIPTION: Quaternary Salt Solution
PRODUCT CLASS: Specialty
MSDS REVISION: 03-07-11

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Choline Chloride ((2-Hydroxyethyl)trimethyl ammonium chloride)	67-48-1	20-80	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear colorless liquid.

CAUTION!

May cause irritation to eyes, skin, and respiratory tract.

May be harmful if swallowed or inhaled.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, skin absorption, ingestion,
and inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: No information is available.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause eye irritation with tearing, redness, and pain. Choline chloride is a lachrymator (substance which increases the flow of tears).

SKIN CONTACT: Contact may cause skin irritation with redness and pain. This product may be harmful if absorbed through the skin.

INGESTION: Ingestion may cause irritation of the digestive tract and may be harmful.

INHALATION: Inhalation of product mist may causes respiratory tract irritation and may be harmful.

CHRONIC: Repeated or prolonged exposure to this product may cause liver and kidney damage. Repeated exposure may cause damage to the spleen. Laboratory experiments have resulted in mutagenic effects. Chronic exposure may cause blood effects. Exposure to high concentrations may cause central nervous system depression.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eye lids occasionally to ensure complete rinsing. Get medical attention.

SKIN CONTACT: In a timely manner remove contaminated clothing and wash the affected area thoroughly with plenty of soap and water. Get medical attention. Wash clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, rinse out mouth with water and give two to four cups of water to drink. Get medical attention immediately. Never give anything by mouth to an unconscious person.

INHALATION: Immediately remove victim from exposure to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention.

NOTE TO PHYSICIANS: Treat symptomatically and supportively.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: None.

This product is an aqueous solution and is not flammable or combustible. However, once the water has boiled off, the remaining solids will burn.

LOWER FLAMMABLE LIMIT: Not available

UPPER FLAMMABLE LIMIT: Not available

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Water spray, water fog, dry chemical, alcohol foam, or carbon dioxide. Do NOT use a water jet.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product may emit toxic gases under fire conditions.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, nitrogen oxides, and hydrogen chloride.

NFPA CODES:

Health = 1

Flammability = 0

Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Ventilate the spill area. Keep unnecessary and unprotected people away from the spill site. Stop or reduce any leaks if is safe to do so. Notify appropriate government, occupational health and safety, and environmental authorities.

METHODS FOR CLEAN-UP:

Small spills: Soak up spill with an inert absorbent material. Place residues in a suitable, covered, properly labeled container. Wash the affected area.

Large spills: Contain liquid using an inert absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material.

DISPOSAL: Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

SECTION 7: HANDLING AND STORAGE

HANDLING:

Avoid contact with eyes, skin, and clothing.
Avoid breathing mist.
Use with adequate ventilation.
Wash thoroughly after handling.
Do not take internally.
Keep containers closed when not in use.
Ensure that containers are properly labeled.
Since empty containers retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.
Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store in a cool, dry, well-ventilated area away from incompatible materials.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and clean body-covering clothing

RESPIRATORY PROTECTION: Respiratory protection is not normally needed. If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Use local and/or general exhaust ventilation to maintain airborne concentrations below irritating levels or airborne exposure limits, whichever is lower. Local exhaust is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, the most recent edition, for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 4.0-9.0

SPECIFIC GRAVITY: 1.055-1.095 g/mL

SOLUBILITY IN WATER: Soluble

BOILING POINT: Not available

FREEZING POINT: < -16.6 °F (< -27 °C)

DECOMPOSITION POINT: 568-586 °F (298-308 °C), choline chloride decomposes

VAPOR PRESSURE: Not available

VAPOR DENSITY (air=1): Not available

APPEARANCE AND ODOR: Clear and colorless with no odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under ordinary conditions of use and storage.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Extreme heat and incompatibles

INCOMPATIBILITIES: Strong oxidizing agents, strong acids, and strong bases.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, nitrogen oxides, and hydrogen chloride.

SECTION 11: TOXICOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Choline chloride	3,400 mg/kg	Not available	Not available

SECTION 12: ECOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Aquatic Toxicity Data
Choline chloride	48 hr EC50 (Water flea, Daphnia magna): >500 mg/L 96 hr LC50 (Golden orfe, Leuciscus idus): >10,000 mg/L 72 hr EC50 (Algae, Scenedesmus subspicatus): >500 mg/L 17 hr EC50 (Bacteria, Pseudomonas putida): 133 mg/L

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product, as sold, would not be considered a RCRA Hazardous.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION:

Proper Shipping Name: Not applicable

Primary Hazard Class/Division: Not restricted

UN Number: Not applicable

Packing Group: Not applicable

Label: None

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

Chemical Name

CERCLA Reportable Quantity (RQ)

None

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

Chemical Name

CAS#

RQ

TPQ

None

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
yes	no	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
None		

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 1 Flammability = 0 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, Superior Well Services makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.



1380 Route 286
Suite 121
Indiana, PA 15701

EXP-F0713-11

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **EXP-F0713-11**
CHEMICAL DESCRIPTION: Solvent-surfactant Microemulsion
PRODUCT CLASS: Specialty
VERSION: 7-12-11

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
N-Methyl Pyrrolidone	872-50-4	10-30	None established	None established
Isopropyl alcohol (IPA)	67-63-0	1-20	TWA: 400 ppm 980 mg/m ³	TWA: 200 ppm STEL: 400 ppm
Nonionic surfactant	Proprietary	1-20	None established	None established
Proprietary solvent	Proprietary	2-40	None established	None established
D-Limonene	5989-27-5	1-20	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear colorless to light yellow liquid with a citrus odor.

WARNING! Flammable liquid and vapor.

Harmful if swallowed or inhaled. Causes irritation to eyes, skin, and respiratory tract.

Harmful if absorbed through skin. May cause skin sensitization. Affects the central nervous system.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, skin absorption, ingestion, and inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Conditions of the eye, skin, respiratory tract, liver, and kidney may be aggravated by overexposure to this product.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause eye irritation. Symptoms may include stinging, tearing, redness, and swelling of the eyes.

SKIN CONTACT: Contact may cause skin irritation with redness, pain, and drying and cracking of the skin. The product components, N-methyl pyrrolidone, isopropyl alcohol, D-Limonene and proprietary solvent may be absorbed through the skin with possible systemic effects. Contact with the product component, D-Limonene, can cause skin sensitization.

INGESTION: Ingestion of this product may cause gastrointestinal irritation with cramping, pain, nausea, vomiting, and diarrhea. Ingestion may present an aspiration hazard. In addition to gastric upset, ingestion of the product component, isopropyl alcohol, can cause drowsiness, unconsciousness, and death. Ingestion of the product component, proprietary solvent, can cause nerve depression, liver and kidney lesions, and anuria as well as gastric upset.

INHALATION: Inhalation may cause nose, throat, and respiratory tract irritation, coughing, and headache. Inhalation of vapors of the product component, IPA, irritates the respiratory tract. Exposure to high concentrations of IPA has a narcotic effect, producing symptoms of dizziness, drowsiness, headache, staggering and unconsciousness.

SUBCHRONIC, CHRONIC: No information is available for this product. Information on components follows.

Prolonged or repeated exposure or contact to any product component may cause irritation, dermatitis and drying or cracking of the skin

N-Methyl pyrrolidone: Adverse reproductive effects have been reported in animals after repeated, high-dose oral and inhalation exposures. Human occupational exposure has been associated with chronic eye irritation, headaches, and irritant contact dermatitis.

Proprietary solvent: Chronic exposure may cause liver and kidney lesions and damage.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eye lids occasionally to ensure complete rinsing. Get medical attention immediately.

SKIN CONTACT: In a timely manner remove contaminated clothing and wash the affected area thoroughly with plenty of soap and water. Get medical attention if irritation occurs.

INGESTION: Do NOT induce vomiting. If victim is conscious and alert, rinse out mouth with water and give 2 glasses of water to drink. Get medical attention immediately. Never give anything by mouth to an unconscious person.

INHALATION: Immediately remove victim from exposure to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: <70 °F (<21.1 °C), Pensky Martin Closed Cup

LOWER FLAMMABLE LIMIT: Not available

UPPER FLAMMABLE LIMIT: Not available

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Dry chemical, alcohol-resistant foam, carbon dioxide (CO₂). Caution: Carbon dioxide will displace air in confined spaces and may create an oxygen deficient atmosphere. Water can be used to cool fire-exposed containers.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: This product and its vapors are flammable. Exposure to heat, flame, or static discharge or other sources of ignition can cause a fire or explosion. Product vapors can flow along surfaces to a distant ignition source and flash back. Containers may explode in the heat of a fire. Product may emit toxic gases under fire conditions.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, oxides of nitrogen, oxides of sulfur, metallic oxides, oxides of citrus terpenes, and irritating and toxic fumes and gases.

NFPA CODES: Health = 2 Flammability = 3 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Keep unnecessary and unprotected people away from the spill site. Ensure that clean-up is conducted by trained personnel only. Remove all sources of ignition. Use non-sparking tools and equipment. Ventilate the spill area. Stop or reduce any leaks if is safe to do so. Notify appropriate government, occupational health and safety, and environmental authorities.

METHODS FOR CLEAN-UP:

Small spills: Soak up spill with an inert absorbent material (e.g. vermiculite, dry sand, earth). Do not use combustible materials such as saw dust. Place residues in a suitable, covered, properly labeled container. Wash the affected area.

Large spills: Contain liquid using an inert absorbent material (e.g. vermiculite, dry sand, earth), by digging trenches, or by diking. If using an absorbent, do not use combustible materials such as saw dust. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material.

DISPOSAL: Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

SECTION 7: HANDLING AND STORAGE

HANDLING:

Avoid contact with eyes, skin, and clothing.
Avoid breathing vapor or mist.
Use with adequate ventilation.
Wash thoroughly after handling.
Do not take internally.
Keep containers closed when not in use.
Ensure that containers are properly labeled.
Since empty containers retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.
Have emergency equipment (for fires, spills, leaks, etc.) readily available.
Do not smoke where this product is handled or stored.

Use non-sparking type tools and equipment, including explosion proof ventilation. Do not cut, drill, grind, or weld empty containers, since they contain explosive residues.

STORAGE:

Store in a cool, dry, well-ventilated area away from incompatible materials and heat, open flame, and other ignition sources.

Protect containers from physical damage.

Outside or detached storage is preferred.

BONDING AND GROUNDING: Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

WARNING: Small quantities of peroxides can form with prolonged storage of the product component, isopropyl alcohol. Exposure to light and/or air significantly increases the rate of peroxide formation. If evaporated to a residue, the mixture of peroxides and isopropyl alcohol may explode when exposed to heat or shock.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Use chemical splash goggles. Also wear a full face shield where splashing is possible.

SKIN PROTECTION: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

RESPIRATORY PROTECTION: If airborne concentrations exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Use local and/or general exhaust ventilation to maintain airborne concentrations below irritating levels or airborne exposure limits, whichever is lower. Local exhaust is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, the most recent edition, for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 12: ECOLOGICAL INFORMATION**ON INGREDIENTS**

Test Material	Aquatic Toxicity Data
N-Methyl Pyrrolidone	48 hr EC50 (Daphnia): >1,000 mg/L LC50 (fish): >500 mg/L 72 hr EC50 (Algae): >500 mg/L
Isopropyl alcohol (IPA)	48 hr LC50 (Golden orfe): 8,970 mg/L 24 hr LC50 (Goldfish): >5,000 mg/L 96 hr LC50 (Fathead minnow): 1,000 mg/L
Nonionic surfactant	48 hr LC50 (Daphnia magna): 0.29-3.3 mg/L 96 hr LC50 (Fathead minnow): 0.48-2.5 mg/L
Proprietary solvent	No data available on this component
D-Limonene	48 hr LC50 (Daphnia magna): 0.4 mg/L 96 hr LC50 (Fish): 0.7 mg/L

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. This material may be expected to be slightly toxic to aquatic life.

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product, as sold, would be considered a RCRA Hazardous Waste based on the characteristic of ignitability. The EPA Hazardous Waste Number is D001.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION**DOT CLASSIFICATION:**

Proper Shipping Name: Flammable Liquids, n.o.s.
(contains Isopropyl Alcohol and D-Limonene)

Primary Hazard Class/Division: 3

UN Number: 1993

Packing Group: II

Label: Flammable

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

<u>Chemical Name</u>	<u>CERCLA Reportable Quantity (RQ)</u>
None	

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

<u>Chemical Name</u>	<u>CAS#</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
yes	yes	yes	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS #</u>	<u>Weight %</u>
Isopropyl alcohol	67-63-0	1-20
N-Methyl vinyl pyrrolidone	872-50-4	1-20

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 2 Flammability = 3 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, Superior Well Services makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.



HMS Hazard Rating:

- 4 = Severe
- 3 = Serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimal

Fire

Health

Reactivity

Personal Protection

I. Chemical Product and Company Identification

Product Name: LSG-100
Identification #: 00-000-0000
Product Use/Class: Gelling Agent
Supplier: Superior Well Services
Supplier Tracking Code: 1100
Emergency Contact: CHEMTREC 1 (800) 424-9300
Prepared By: jps
Date Prepared: 12/02/2011

II. Composition/Information on Ingredients

Chemical Name: Hydrocarbons
CAS Number: 64742-96-7
Percent by Mass Less Than: 40-70

Exposure Limits

Threshold Limit Value - Time Weighted Average:	N/A
Threshold Limit Value - Short Term Exposure Limit:	N/A
Permissible Exposure Limit - Time Weighted Average:	N/A
Permissible Exposure Limit - Ceiling:	N/A
Company Threshold Limit - Time Weighted Average:	N/A
Skin:	N/A

III. Hazardous Identification

Emergency Overview: N/A
Eye Contact: N/A
Skin Contact: N/A
Inhalation: N/A
Ingestion: N/A
Chronic Harards: N/A

Effects of
Overexposure

Primary Route(s) of Entry: Skin Contact Eye Contact Ingestion
 Skin Absorbtion Inhalation

IV. First Aid Measures

Eye Contact: Check for and remove any contact lenses. Flush with running water for at least 15 minutes. Do not use eye ointment. Seek medical attention.
Skin Contact: After contact with skin, was immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reuse.
Inhalation: Allow victim to rest in a well ventilated area. Seek medical attention.
Ingestion: Seek medical attention if ingested. Induction of vomiting not required.

V. Fire Fighting Measures

Flash Point: 200° F closed cup.
Auto Ignition Temperature: N/A
Lower Explosive Temp.: N/A
Upper Explosive Temp.: N/A
Extingulshing Media: N/A
Unusual Fire and Explosive Harards: N/A
Special Fire Fighting Procedures: For small fires, use dry chemical powder. For large fires, use water spray, fog or foam. Do not use water jet.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: For small spills, absorb with an inert material and put the spilled material in an appropriate waste disposal. For large spills, absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Wetted product will be very slippery.

VII. Handling and Storage

Handling:	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas fumes, vapor or spray in case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice.
Storage:	Keep container dry. Keep in a cool, well ventilated place. Ground all equipment containing material. Keep container tightly closed. Combustibles should be stored away from extreme heat and away from strong oxidizing agents. Avoid contaminating product with water.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	N/A
Respiratory Protection:	Vapor respirator.
Skin Protection:	Gloves and apron.
Eye Protection:	Safety goggles.
Other Protective Equipment:	N/A
Hygienic Practices:	N/A

IX. Physical and Chemical Properties

Boiling Point:	>420° F	Vapor Density:	>14
Odor:	Kerosene-like.	Odor Threshold:	N/A
Appearance:	Oily slurry tan.	Evaporation Rate:	N/A
Solubility in H ₂ O:	NA	Specific Gravity:	1.02
Freeze Point:	N/A	pH at 50.0%:	6-8
Vapor Pressure:	N/A	Viscosity:	N/A
Physical State:	Liquid		
Coefficient of Water Oil Distribution:	N/A		

X. Stability and Reactivity

Conditions to Avoid:	N/A
Incompatibility:	N/A
Hazardous Decomposition Products:	N/A
Hazardous Polymerization:	N/A
Stability:	N/A

XI. Toxicological Properties

Toxicological Properties:	No product information is available.
Oral:	No product information is available.
Dermal:	No product information is available.
Inhalation:	No product information is available.

XII. Ecological Information

Ecological Properties: No product information is available.
Ecotoxicity: No product information is available.
Chemical Fate Information: No product information is available.

XIII. Disposal Consideration

Disposal Method: Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

RCRA Status: No product information is available.

XIV. Transportation Information

DOT Proper Shipping Name: Not DOT Regulated

DOT Technical Name:

DOT Hazard Class:

DOT Hazard Subclass:

DOT UN/NA Number:

Packing Group:

Resp. Guide Page:

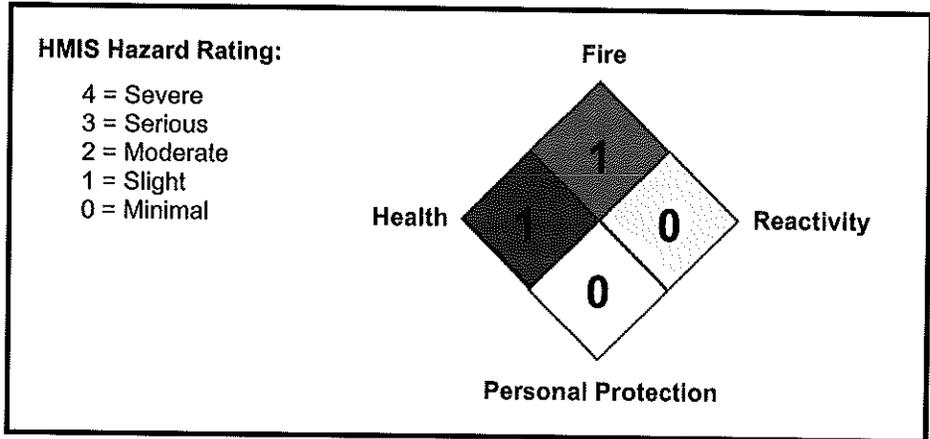
XV. Regulatory Information

OSHA: No Information
TSCA Status: No Information
CERCLA SARA: No Information
SARA Section 313
Required Reporting:

XVI. Other Information

Other Information: NA = Not applicable ND = Not Determined NI = No Information NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.



I. Chemical Product and Company Identification

Product Name: KR-153SL
Identification #: 35-440-xxxx
Product Use/Class: Biocide
Supplier: Superior Well Services
Manufacturer: KROFF Chemical Company Inc.
Emergency Contact: CHEMTREC 1 (800) 424-9300
Prepared By: RAA
Date Prepared: 09/04/2008

II. Composition/Information on Ingredients

Chemical Name: 2,2-Dibromo-3-nitrilo-propionamide (DBNPA)
CAS Number: 10222-01-2
Percent by Mass Less Than: 20

Exposure Limits

Threshold Limit Value - Time Weighted Average: NI
Threshold Limit Value - Short Term Exposure Limit: NI
Permissible Exposure Limit - Time Weighted Average: NI
Permissible Exposure Limit - Ceiling: NI
Company Threshold Limit - Time Weighted Average: NI
Skin: NI

Chemical Name: Polyethylene Glycol (PEG)
CAS Number: 25322-68-3
Percent by Mass Less Than: 50

Exposure Limits

Threshold Limit Value - Time Weighted Average: NI
Threshold Limit Value - Short Term Exposure Limit: NI
Permissible Exposure Limit - Time Weighted Average: NI
Permissible Exposure Limit - Ceiling: NI
Company Threshold Limit - Time Weighted Average: NI
Skin: NI

Chemical Name: Diethylene Glycol
CAS Number: 111-46-6
Percent by Mass Less Than: 1.5-3.5

Exposure Limits

Threshold Limit Value - Time Weighted Average: NI
Threshold Limit Value - Short Term Exposure Limit: NI
Permissible Exposure Limit - Time Weighted Average: NI
Permissible Exposure Limit - Ceiling: NI
Company Threshold Limit - Time Weighted Average: NI
Skin: NI

Chemical Name: Ethylene Glycol
CAS Number: 107-21-1
Percent by Mass Less Than: 1

Exposure Limits

Threshold Limit Value - Time Weighted Average: NI
Threshold Limit Value - Short Term Exposure Limit: 100 mg/m3 (aerosol only)
Permissible Exposure Limit - Time Weighted Average: NI
Permissible Exposure Limit - Ceiling: NI
Company Threshold Limit - Time Weighted Average: NI
Skin: NI

III. Hazardous Identification

Emergency Overview:	Warning! Clear, yellow liquid. Causes burns.
Eye Contact:	Corrosive. Will cause eye burns and permanent tissue damage.
Skin Contact:	May cause skin irritation or burns. Allergic reactions are possible. May cause skin sensitization, an allergic reaction which becomes evident on re-exposure to this material.
Inhalation:	Mist may cause irritation of upper respiratory tract.
Ingestion:	This material may be harmful or fatal if swallowed. May be irritating to mouth, throat, and stomach. Single dose oral toxicity is considered moderate.
Chronic Harards:	Chronic exposure to propylene glycol and ethylene glycol can cause kidney, liver, and brain damage and may cause skin sensitization.

Effects of
Overexposure

Primary Route(s) of Entry:	<input checked="" type="checkbox"/> Skin Contact	<input checked="" type="checkbox"/> Eye Contact	<input checked="" type="checkbox"/> Ingestion
	<input type="checkbox"/> Skin Absorbtion	<input checked="" type="checkbox"/> Inhalation	

IV. First Aid Measures

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention if irritation persists.
Skin Contact:	Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	If swallowed, DO NOT induce vomiting. If victim is fully conscious, drink 1-2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

V. Fire Fighting Measures

Flash Point:	NI
Auto Ignition Temperature:	Not Determined
Lower Explosive Temp.:	N/A
Upper Explosive Temp.:	N/A
Extinguishing Media:	CO2, Dry Chemical, Water Spray
Unusual Fire and Explosive Harards:	May emit toxic fumes in fire.
Special Fire Fighting Procedures:	As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled:	Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Decontaminate with 10% sodium bicarbonate solution, then absorb with inert material. Once clean up is complete, wash spill site. Wear a self-contained breathing apparatus and appropriate personal protective equipment. Spilled material should be contained and disposed of properly.
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VII. Handling and Storage

Handling:	Avoid contact with eyes, skin or clothing. Avoid breathing vapors . Use with adequate ventilation. DO NOT take internally. Wear appropriate PPE. Wash thoroughly after handling. Wash contaminated clothing before reuse. Discard contaminated leather articles. Do not eat, drink or smoke when handling this product.
Storage:	Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials. Store below 104F/40C. Storage must be in original container. Keep container tightly closed.

VIII. Exposure Controls/Personal Protection

Engineering Controls:	Local exhaust and ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Respiratory Protection:	A NIOSH/MSHA approved particulate respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by particulate respirators is limited.
Skin Protection:	Where contact is likely, wear chemical resistant gloves and rubber boots.
Eye Protection:	Wear safety glasses with side shields (or goggles) and a face shield.
Other Protective Equipment:	Emergency eyewash stations and deluge showers should be available in the work area.
Hygienic Practices:	Wash hands before eating. Remove contaminated clothing and wash before reuse. Use only with adequate ventilation. Avoid contact with eyes, skin, and clothing.

IX. Physical and Chemical Properties

Boiling Point:	> 158 F	Vapor Density:	<1
Odor:	Sharp odor	Odor Threshold:	No Information
Appearance:	Clear yellow liquid	Evaporation Rate:	No Information
Solubility in H2O:	Complete	Specific Gravity:	NI
Freeze Point:	<-7.6 F	pH at 50.0%:	2-6.5 @ 25 C
Vapor Pressure:	4X10 (-5) mmHg	Viscosity:	No Information
Physical State:	Liquid		
Coefficient of Water Oil Distribution:	No Information		

X. Stability and Reactivity

Conditions to Avoid:	Avoid temperatures above 158 DegF and exposure to light.
Incompatibility:	Avoid contact with strong bases, reducing agents, and oxidizing agents.
Hazardous Decomposition Products:	May include oxides of carbon and/or nitrogen, bromine gas, cyanogen bromide and/or hydrogen bromide.
Hazardous Polymerization:	Will not occur under normal conditions.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties: No Information
Oral: DBNPA LD50 rat: 308 mg/kg
Diethylene Glycol LD50 rat: 12,565 mg/kg
Ethylene Glycol LD50 rat: 4,700 mg/kg
Dermal: Diethylene Glycol LD50 rabbit: 11,890 mg/kg
Ethylene Glycol LD50 rabbit: 9,530 ml/kg
Inhalation: DBNPA LC50 rat: .32 mg/L/4hr
Ethylene Glycol LC50 rat: 12,111 mg/L

XII. Ecological Information

Ecological Properties: No Information
Ecotoxicity: DBNPA Aquatic Toxicity Data 96hr LC50: range from .37 mg/L to 3.4 mg/L
Ethylene Glycol Aquatic Toxicity Data from 24hr to 96 hr LC50: range from 5,000 mg/L to 51,000 mg/L
Chemical Fate Information: No product information is available.

XIII. Disposal Consideration

Disposal Method: Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
RCRA Status: Not Determined.

XIV. Transportation Information

DOT Proper Shipping Name: Not DOT Regulated
DOT Technical Name: Non-Bulk Shipments
DOT Hazard Class:
DOT Hazard Subclass:
DOT UN/NA Number:
Packing Group:
Resp. Guide Page:

DOT Proper Shipping Name: Environmentally hazardous substances, liquid, n.o.s.
DOT Technical Name: (contains 2,2-Dibromo-3-nitrilopropionamide)
DOT Hazard Class: 9
DOT Hazard Subclass:
DOT UN/NA Number: UN3082
Packing Group: III
Resp. Guide Page:

XV. Regulatory Information

OSHA:	Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)		
TSCA Status:	All components of this product are listed on the Toxic Substance Control Act Inventory.		
CERCLA SARA:	This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: Immediate Health Hazard, Chronic Health Hazard		
SARA Section 313 Required Reporting:	Chemical	CAS Number	WT/WT%
	Diethylene Glycol	111-46-6	1.5-3.5
	Ethylene Glycol	107-21-1	1

XVI. Other Information

Other Information: NA = Not applicable ND = Not Determined NI = No Information NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.



1380 Route 286
Suite 121
Indiana, PA 15701

Super TSC

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **Super TSC**

CHEMICAL DESCRIPTION: Aqueous blend of propylene glycol, phosphonate,
and anionic polymers

PRODUCT CLASS: Specialty

VERSION: 3-10-10

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Propylene glycol	57-55-6	20-40	None established	None established
2-Phosphonobutane- 1,2,4-tricarboxylic acid, potassium salt	93858-78-7	1-15	None established	None established
Anionic copolymer	Proprietary	1-15	None established	None established
Anionic polymer	Proprietary	1-15	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear colorless liquid.

WARNING!

May cause eye and skin irritation.

Ingestion may cause gastrointestinal irritation.

Not an inhalation hazard unless respirable mists, aerosols, or vapors are generated.

If generated, mists, aerosols, or vapors may cause respiratory tract irritation.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, ingestion, and inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Conditions of the eye, skin, and respiratory system may be aggravated by overexposure to this product.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause eye irritation with tearing, redness, and swelling.

SKIN CONTACT: Contact may cause skin irritation with redness.

INGESTION: Ingestion may cause gastrointestinal irritation. Ingestion of a sizable amount may cause gastrointestinal upset and temporary central nervous system depression.

INHALATION: If product mists, aerosols, or vapors are generated and inhaled, respiratory tract irritation may occur. Dizziness, headache, nausea, and flu-like symptoms may also occur. Persons with sensitive airways (e.g. asthmatics) may react to inhaled mists.

SUBCHRONIC, CHRONIC: No information is available for this product. Information on product component(s) follows.

Repeated or prolonged exposure of the skin to propylene glycol may cause defatting and drying of the skin. Propylene glycol does not pose a chronic inhalation hazard unless mists, aerosols, or vapors are generated and inhaled over a prolonged period of time or are repeatedly inhaled. If so, central nervous system depression may occur.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure complete rinsing. Get medical attention immediately.

SKIN CONTACT: In a timely manner remove contaminated clothing and wash the affected area thoroughly with plenty of soap and water. If irritation occurs, get medical attention. Wash contaminated clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, give large quantities of water. Get medical attention. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: In case of ingestion, treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

INHALATION: If inhalation occurs, remove victim to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention if any breathing difficulties occur.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: Not available but expected to exceed 200 °F (93.3 °C)

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Alcohol foam, water fog, carbon dioxide, or dry chemical. Do not use a direct stream of water or frothing may occur.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product emits toxic gases under fire conditions. A flammable concentration of propylene glycol vapor can accumulate at temperatures above 215 °F (101.7 °C).

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, potassium, phosphorus, nitrogen, sulfur, and sodium as well as acrylate monomers, hydrocarbons, aldehydes, lactic acid, pyruvic acid, and acetic acid.

NFPA CODES:

Health = 1

Flammability = 1

Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Restrict access to area as appropriate until clean-up operations are complete. Do not touch spilled material. Ventilate the spill area. Stop or reduce any leaks if it is safe to do so.

METHODS FOR CLEAN-UP:

Small spills: Soak up spill with an inert material (e.g. vermiculite, dry sand, earth). Place residues in a suitable, covered, properly labeled container. Wash the affected area.

Large spills: Contain liquid using an inert absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal).

SECTION 7: HANDLING AND STORAGE**HANDLING:**

Avoid contact with eyes, skin, and clothing.
Avoid breathing mist.
Use with adequate ventilation.
Wash thoroughly after handling.
Do not take internally.
Keep containers closed when not in use.
Ensure that containers are properly labeled.
Since empty containers retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.
Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store product in a cool, dry, well-ventilated area away from incompatibles.
Avoid elevated temperatures.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and clean body covering clothing

RESPIRATORY PROTECTION: If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection.

ENGINEERING CONTROLS: A system of local and/or general exhaust is recommended to keep employee exposures below irritating levels. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the latest edition of the ACGIH document *Industrial Ventilation, A Manual of Recommended Practices* for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 6.0-7.5

SPECIFIC GRAVITY: 1.12-1.18 g/mL

SOLUBILITY IN WATER: Complete

BOILING POINT: Not available

FREEZING POINT: <5 °F (<-15 °C)

VAPOR PRESSURE: Not available

VAPOR DENSITY: Not available

APPEARANCE AND ODOR: Clear, colorless liquid with a mild odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid temperatures above 250 °F (121 °C) since propylene glycol decomposes at temperatures exceeding that value.

INCOMPATIBILITIES: Strong oxidizing agents, strong bases, and strong acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, potassium, phosphorus, nitrogen, sulfur, and sodium as well as acrylate monomers, hydrocarbons, aldehydes, lactic acid, pyruvic acid, and acetic acid.

SECTION 11: TOXICOLOGICAL INFORMATION

Based on information below, the product is expected to be practically non-toxic by dermal, inhalation or oral exposure.

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Propylene glycol	>20,000 mg/Kg	>10,000 mg/Kg	Not available

2-Phosphonobutane-1,2,4-tricarboxylic acid (PBTC)*	>6,500 mg/Kg	>4,000 mg/Kg	>3,000 mg/m ³ /4H**
Anionic copolymer, 28% solution	>5,000 mg/Kg	>2,000 mg/Kg	Not available
Anionic polymer, sodium salt	>1,450 mg/Kg	>5,800 mg/Kg	Not available

*Test material is based on 2-PBTC as acid, however the potassium salt of 2-PBTC is contained in the product.

**Neutralized form tested with results recalculated for 50% acid form

SECTION 12: ECOLOGICAL INFORMATION

Based on information below, the product is expected to be non-toxic to aquatic species.

Test Material	Aquatic Toxicity Data
Propylene glycol	Acute LC50 (Daphnia magna): 4,850-34,400 mg/L Acute LC50 (Fathead minnow): 46,500-54,900 mg/L Acute LC50 (Guppy): >10,000 mg/L Acute LC50 (Rainbow trout): 44,000 mg/L
2-Phosphonobutane-1,2,4-tricarboxylic acid (PBTC)*	48 hr EC50 (Daphnia magna): >300 mg/L** 48 hr LCo (Rainbow trout): 5,300 mg/L 96 hr LC50 (Rainbow trout): >1,000 mg/L**
Anionic copolymer	48 hr LC50 (Daphnia magna): 2,800 mg/L 96 hr LC50 (Bluegill sunfish): >10,000 mg/L 96 hr LC50 (Rainbow trout): 4,900 mg/L
Anionic polymer, as acid solution***	48 hr EC50 (Daphnia): 1,509 mg/L 96 hr LC50 (Rainbow trout): 1,182 mg/L

* Test material is based on 2-PBTC as acid, however the potassium salt of 2-PBTC is contained in the product.

**Neutralized form tested with results recalculated for 50% acid form

***Testing performed at near neutral pH

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product, as sold, would not be considered a RCRA Hazardous Waste.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION: Not regulated by DOT in domestic ground transportation.

UN Number: Not applicable

Proper Shipping Name: Not applicable

Primary Hazard Class/Division: Not restricted

Packing Group: Not applicable

Label: None

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status:

This product is not considered to be hazardous as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

<u>Chemical Name</u>	<u>CERCLA Reportable Quantity (RQ)</u>
No ingredients have a CERCLA RQ.	

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

<u>Chemical Name</u>	<u>CAS#</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
no	no	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
None		

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 1 Flammability = 1 Reactivity = 0

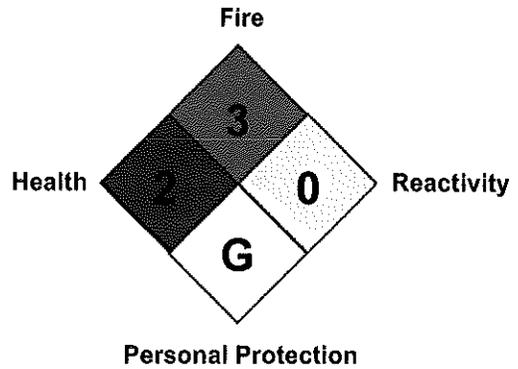
Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, Superior Well Services makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.



HMIS Hazard Rating:

- 4 = Severe
- 3 = Serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimal



I. Chemical Product and Company Identification

Product Name: Super 100NE
 Identification #: 35-525-0100
 Product Use/Class: Surfactant & Foamer
 Supplier: Superior Well Services
 Manufacturer: Benchmark Research & Technology, Inc.
 Emergency Contact: CHEMTREC 1 (800) 424-9300
 Prepared By: RAA
 Date Prepared: 02/27/2008

II. Composition/Information on Ingredients

Chemical Name: Isopropyl Alcohol
 CAS Number: 67-63-0
 Percent by Mass Less Than: 10-30

Exposure Limits

Threshold Limit Value - Time Weighted Average: 400 ppm
 Threshold Limit Value - Short Term Exposure Limit: 500 ppm
 Permissible Exposure Limit - Time Weighted Average: 400 ppm
 Permissible Exposure Limit - Ceiling: 500 ppm
 Company Threshold Limit - Time Weighted Average: NE
 Skin: No information

Chemical Name: Glycol Ethers
 CAS Number: 111-76-2
 Percent by Mass Less Than: 3-7

Exposure Limits

Threshold Limit Value - Time Weighted Average: 25 ppm
 Threshold Limit Value - Short Term Exposure Limit: NE
 Permissible Exposure Limit - Time Weighted Average: 25 ppm
 Permissible Exposure Limit - Ceiling: NE
 Company Threshold Limit - Time Weighted Average: NE
 Skin: No information

III. Hazardous Identification

Emergency Overview:	Flammable liquid, keep away from sparks or flames.
Effects of Overexposure	Eye Contact: Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.
	Skin Contact: May cause skin irritation. Allergic reaction are possible. May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.
	Inhalation: Headaches, dizziness, nausea, decreased blood pressure, change in heart rate, and cyanosis may result from overexposure to vapor. May be irritating to mucous membranes and lung tissue.
	Ingestion: This material may be harmful or fatal if swallowed. May be irritating to mouth, throat, and stomach.
	Chronic Harards: Overexposure may cause nervous system and kidney damage. May cause liver disorder (e.g. edema, proteinuria) and damage.

Primary Route(s) of Entry:	<input type="checkbox"/> Skin Contact	<input type="checkbox"/> Eye Contact	<input type="checkbox"/> Ingestion
	<input type="checkbox"/> Skin Absorbtion	<input type="checkbox"/> Inhalation	

IV. First Aid Measures

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention if irritation persists.
Skin Contact:	Remove contaminated clothing. Wash skin with soap and water. Get medical attention if irritation persists. Wash contaminated clothing before reuse.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion:	If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

V. Fire Fighting Measures

Flash Point:	80 F
Auto Ignition Temperature:	Not Determined
Lower Explosive Temp.:	2.0%
Upper Explosive Temp.:	12.0%
Extinguishing Media:	Alcohol Foam, CO2, Dry Chemical, Foam, Water Fog
Unusual Fire and Explosive Harards:	Vapors can travel to a source of ignition and flash back. "Empty" containers retain product residue (liquid and/or vapors) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC, ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum conditioner, or properly disposed of. Emits highly toxic and irritating fumes in a fire.
Special Fire Fighting Procedures:	Containers can build up pressure if exposed to heat (fire). As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. When using water spray, use extreme caution. This material in solution is highly corrosive. Apply alcohol-type foam or all purpose foam by manufacturers recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires. Use water spray to cool containers.

VI. Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Extinguish and possible ignition source until the area is determined to be free from fire or explosive hazards. Evacuate area. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Avoid runoff into storm sewers and ditches. (See section VIII.) Wear a self-contained breathing apparatus and appropriate personal protective equipment. Spilled material should be contained and disposed of properly.

VII. Handling and Storage

Handling: Handle all chemicals with care. Ground and bond containers when transferring materials.
Storage: Keep away from heat, sparks, and flames. Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials.

VIII. Exposure Controls/Personal Protection

Engineering Controls: Local exhaust and ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.
Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited.
Skin Protection: Where contact is likely, wear chemical resistant gloves and rubber boots.
Eye Protection: Wear safety glasses with side shields (or goggles) and a face shield. Do not wear contact lenses.
Other Protective Equipment: Where splashing is possible, full chemically resistant protective clothing (acid suit) and boots are required. Emergency eyewash stations and deluge showers should be available in the work area.
Hygienic Practices: Avoid contact with eyes, skin, and clothing. Wash hands before eating. Use only with adequate ventilation. Remove contaminated clothing and wash before reuse. Follow all MSDS/label precautions even after container is emptied they may retain product residues. Ground and bond containers when transferring material.

IX. Physical and Chemical Properties

Boiling Point:	180 F	Vapor Density:	Heavier than air
Odor:	Not Determined	Odor Threshold:	No Information
Appearance:	Yellow	Evaporation Rate:	No Information
Solubility in H ₂ O:	Not Determined	Specific Gravity:	1.0350
Freeze Point:	Not Determined	pH at 50.0%:	6-8 @ 100%
Vapor Pressure:	Not Determined	Viscosity:	Not Determined
Physical State:	Liquid		
Coefficient of Water Oil Distribution:	No Information		

X. Stability and Reactivity

Conditions to Avoid:	Avoid temperature extremes. Excessive heat causes the vapor pressure to increase rapidly.
Incompatibility:	Avoid contact with base, chlorine, metal nitrates and heat, fuming nitric acid. Avoid contact with strong acids. Avoid contact with strong oxidizing agents.
Hazardous Decomposition Products:	Thermal decomposition may produce sulfur and nitrogen oxides; carbon dioxides, which can act as an asphyxiant; and carbon monoxide, which is toxic if inhaled.
Hazardous Polymerization:	Will not occur under normal conditions.
Stability:	This product is stable under normal storage conditions.

XI. Toxicological Properties

Toxicological Properties:	No product information is available.
Oral:	No product information is available.
Dermal:	No product information is available.
Inhalation:	No product information is available.

XII. Ecological Information

Ecological Properties:	No product information is available.
Ecotoxicity:	No product information is available.
Chemical Fate Information:	No product information is available.

XIII. Disposal Consideration

Disposal Method:	Consult local, state, and federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.
RCRA Status:	DOO1-Characteristic of ignitability.

XIV. Transportation Information

DOT Proper Shipping Name:	Flammable liquids, n.o.s.
DOT Technical Name:	(Contains Isopropanol)
DOT Hazard Class:	3
DOT Hazard Subclass:	
DOT UN/NA Number:	UN1993
Packing Group:	III
Resp. Guide Page:	

XV. Regulatory Information

OSHA:	No Information		
TSCA Status:	All components of this product are listed on the Toxic Substance Control Act Inventory or are excluded from the listing requirements.		
CERCLA SARA:	This product has been reviewed according to the EPA 'Hazard Categories' promulgated under the sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:Chronic hazard, fire hazard		
SARA Section 313 Required Reporting:	Chemical	CAS Number	WT/WT%
	Glycol Ethers	111-76-2	3-7

XVI. Other Information

Other Information: NA = Not applicable ND = Not Determined NI = No Information NE = Not Established

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, or when used in conjunction with other products, exposures must be evaluated by the user so that appropriate handling practices and training programs can be established to ensure safe workplace operations. This information is confidential to Superior Well Services, Ltd. (SWSI) and intended solely for the use of the individual or entity to whom they are directly distributed. Distribution or use beyond the individual or entity is strictly prohibited without the consent of SWSI.



1380 Route 286
Suite 121
Indiana, PA 15701

ICP-1000

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **ICP-1000**
CHEMICAL DESCRIPTION: Aqueous blend of propylene glycol and dispersant
PRODUCT CLASS: Specialty
VERSION: 03-07-11

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Propylene glycol	57-55-6	20-50	None established	None established
Anionic copolymer	Proprietary	20-50	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Appearance: Clear colorless liquid.

CAUTION:

May cause eye and skin irritation. Ingestion may cause gastrointestinal irritation.
Not an inhalation hazard unless respirable mists, aerosols or vapors are generated. If generated, mists, aerosols or vapors may cause respiratory tract irritation.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause irritation.

SKIN CONTACT: Repeated contact may cause irritation.

INGESTION: Ingestion may cause gastrointestinal irritation.

INHALATION: If product mists, aerosols or vapors are generated and inhaled, respiratory tract irritation may occur.

SUBCHRONIC, CHRONIC: No information is available for this product. Information on the product component, propylene glycol, follows.

Repeated or prolonged exposure of the skin to propylene glycol may cause defatting and drying of the skin. In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: In case of contact, flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure complete rinsing. If irritation occurs, get medical attention.

SKIN CONTACT: In case of skin contact, remove contaminated clothing and wash the affected areas thoroughly with plenty of soap and water. Wash contaminated clothing before reuse. If irritation occurs, get medical attention

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, give large quantities of water. Get medical attention. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: In case of ingestion, treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

INHALATION: If inhalation occurs, remove victim to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention if any breathing difficulties occur.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: Not available but expected to exceed 200 °F (93.3 °C)

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Alcohol foam, water fog, carbon dioxide, or dry chemical. Do not use a direct stream of water or frothing may occur.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product emits toxic gases under fire conditions. A flammable concentration of propylene glycol vapor can accumulate at temperatures above 215 °F (101.7 °C).

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, nitrogen, sulfur, and sodium as well as aldehydes, lactic acid, pyruvic acid, and acetic acid.

NFPA CODES:

Health = 0

Flammability = 1

Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Do not touch spilled material. Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Ventilate the spill area. Stop or reduce any leaks if it is safe to do so.

METHODS FOR CLEAN-UP:

Small spills: Soak up spill with an inert absorbent material (e.g. vermiculite, dry sand, earth). Do not use combustible materials, such as saw dust. Place residues in a suitable, covered, properly labeled container. Wash the affected area.

Large spills: Contain liquid using an inert absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal).

SECTION 7: HANDLING AND STORAGE

HANDLING:

Avoid contact with eyes, skin, and clothing.

Avoid breathing mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Do not take internally.

Keep containers closed when not in use.
Ensure that containers are properly labeled.
Since empty containers may retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.
Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store product in a cool, dry, well-ventilated area away from incompatibles.
Avoid elevated temperatures.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

RESPIRATORY PROTECTION: If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection.

ENGINEERING CONTROLS: Use local ventilation exhaust or other engineering controls when mists, vapors or aerosols may be generated. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 3.5-5.0

SPECIFIC GRAVITY: 1.125-1.165 g/mL

SOLUBILITY IN WATER: Complete

BOILING POINT: Not available

FREEZING POINT: -14.8 °F (-26 °F)

VAPOR PRESSURE: Not available

VAPOR DENSITY: Not available

APPEARANCE AND ODOR: Clear, colorless liquid with mild or no odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid heat, flames, ignition sources, and incompatibles. Avoid temperatures above 250 °F (121 °C) since propylene glycol decomposes at temperatures exceeding that value.

INCOMPATIBILITIES: Strong oxidizing agents, strong bases, and strong acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, nitrogen, sulfur, and sodium as well as aldehydes, lactic acid, pyruvic acid, and acetic acid.

SECTION 11: TOXICOLOGICAL INFORMATION

Based on information below, propylene glycol is practically non-toxic by dermal or oral exposure.

The acute toxicity data listed below for the anionic copolymer is based on a similar product.

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Propylene glycol	>20,000 mg/Kg	>10,000 mg/Kg	Not available
Anionic copolymer, as product	>5,000 mg/Kg	>2,000 mg/Kg	Not available

SECTION 12: ECOLOGICAL INFORMATION

Based on ingredient information listed below, the product is expected to be non-toxic to aquatic species.

Test Material	Aquatic Toxicity Data
Propylene glycol	Acute LC50 (Daphnia magna): 4,850-34,400 mg/L Acute LC50 (Fathead minnow): 46,500-54,900 mg/L Acute LC50 (Guppy): >10,000 mg/L Acute LC50 (Rainbow trout): 44,000 mg/L

Section 313 Toxic Chemicals (40 CFR 372):

Chemical NameCAS NumberPercent by Weight

None

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 0 Flammability = 1 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

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CLEARWATER
Engineered Chemistry

Material Safety Data Sheet
EB 4L

HEALTH	1
FLAMMABILITY	1
REACTIVITY	0
PERSONAL PROTECTION	B

24 hr. Emergency Contact (CHEMTREC) US Tel: 1- 800 - 424-9300 - Int'l. Tel. 703 - 527 - 3887

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER: CLEARWATER INTERNATIONAL L.L.C.
 515 POST OAK BLVD., SUITE 600
 HOUSTON, TX 77027

MANUFACTURER: CLEARWATER INTERNATIONAL L.L.C.
 100 INDUSTRIAL DRIVE
 LEETSDALE, PA 15056

PRODUCT NAME: EB 4L
PRODUCT CODE: FRA7210B
PRODUCT USE/CLASS: GEL BREAKER

MSDS REVISION DATE: 05/25/04

PREPARER: MJW

PHONE: 724-318-1050

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	EXPOSURE LIMITS	CAS#	% BY WEIGHT
ETHYLENE GLYCOL	ACGIH TLV – 50 ppm STEL OSHA PEL – 50 ppm CEILING	107-21-1	10-30 %

3. HAZARD IDENTIFICATION

EYE: Liquid, aerosols and vapors of this product may be irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes.

SKIN: May cause skin irritation. Allergic reactions are possible.

INGESTION: May be irritating to mouth throat and stomach, and may cause abdominal discomfort, nausea, and diarrhea.

INHALATION: Prolonged inhalation of concentrated vapors may be harmful. May cause severe irritation to mucous membranes and lung tissue.

CHRONIC INFORMATION: Overexposure may cause nervous system, kidney, and liver damage.

PRIMARY ROUTE(S) OF ENTRY: Inhalation and Ingestion

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention, if irritation persists.

SKIN CONTACT: Wash with soap and water. Get medical attention if irritation develops or persists.

INHALATION: Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.

INGESTION: If swallowed induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Contact a poison control center or medical personnel immediately.

5. FIRE FIGHTING MEASURES

FLASH POINT: >200 °F
(TAGLIABUE CLOSED CUP)

LOWER EXPLOSIVE LIMIT: N.D.
UPPER EXPLOSIVE LIMIT: N.D.

Material Safety Data Sheet

EB 4L

AUTOIGNITION TEMPERATURE: N.D.

EXTINGUISHING MEDIA: ALCOHOL FOAM CO2 DRY CHEMICAL WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: None expected.

SPECIAL FIRE FIGHTING PROCEDURES: As in any fire, wear a self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. (See exposure controls / personal protection section) Spilled material should be disposed of according to applicable regulations.

7. HANDLING AND STORAGE

HANDLING: Handle all chemicals with care. Wash thoroughly after handling.

STORAGE: Keep container closed when not in use. Store in a cool, dry, well ventilated place away from incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation may be necessary to control any air contaminants to within their exposure limits.

RESPIRATORY PROTECTION: No protection needed under normal use and conditions. Use a NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge when airborne concentrations are expected to exceed exposure limits. Protection by air purifying respirators is limited.

SKIN PROTECTION: When contact is likely wear chemical resistant gloves and boots.

EYE PROTECTION: Wear safety glasses with side shields or goggles.

OTHER PROTECTIVE EQUIPMENT: Emergency eye wash stations should be available in the work area.

HYGIENIC PRACTICES: Wash hands before eating.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Yellow

ODOR: N.D.

BOILING POINT (RANGE): 387 °F

FREEZE POINT: N.D.

VAPOR DENSITY: N/D

VAPOR PRESSURE: N/D

PHYSICAL STATE: Liquid

SOLUBILITY IN WATER: Complete

pH (at 100%): 6-8

SPECIFIC GRAVITY: 1.200

VISCOSITY: N.D.

10. STABILITY AND REACTIVITY DATA

CONDITIONS TO AVOID: Avoid temperature extremes.

INCOMPATIBILITY: Avoid contact with strong acid, oxidizers, and caustics.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon.

Material Safety Data Sheet

EB 4L

HAZARDOUS POLYMERIZATION: Will not occur under normal use and storage conditions.

CHEMICAL STABILITY: This product is stable under normal storage conditions.

11. TOXICOLOGICAL INFORMATION

ORAL: No product information is available.

DERMAL: No product information is available.

INHALATION: No product information is available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: No product information is available.

CHEMICAL FATE INFORMATION: No product information is available.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Consult local, state, or federal regulatory agencies for acceptable disposal procedures and disposal locations. Disposal in streams or sewers may be prohibited by federal, state, and local regulations.

RCRA STATUS: None

14. TRANSPORTATION INFORMATION

(NON-BULK SHIPMENTS)

D.O.T. PROPER SHIPPING NAME: Not Regulated

D.O.T. TECHNICAL NAME: Non-Hazardous for D.O.T. Purposes

D.O.T. HAZARD CLASS: N/A

HAZARD SUBCLASS: N/A

D.O.T. UN NUMBER: N/A

PACKING GROUP: N/A

RESP. GUIDE PAGE: N/A

(BULK SHIPMENTS)

D.O.T. PROPER SHIPPING NAME: Not Regulated

D.O.T. TECHNICAL NAME: Non-Hazardous for D.O.T. Purposes

D.O.T. HAZARD CLASS: N/A

HAZARD SUBCLASS: N/A

D.O.T. UN NUMBER: N/A

PACKING GROUP: N/A

RESP. GUIDE PAGE: N/A

T.D.G. PROPER SHIPPING NAME: Not Regulated

T.D.G. TECHNICAL NAME: N/A

T.D.G. HAZARD CLASS: N/A

HAZARD SUBCLASS: N/A

T.D.G. UN NUMBER: N/A

PACKING GROUP: N/A

RESP. GUIDE PAGE: N/A

IMDG PROPER SHIPPING NAME: Not Regulated

IMDG TECHNICAL NAME: N/A

IMDG HAZARD CLASS: N/A

HAZARD SUBCLASS: N/A

IMDG UN NUMBER: N/A

PACKING GROUP: N/A

EmS No: N/A

15. REGULATORY INFORMATION

CERCLA – SARA HAZARD CATEGORY:

SECTION 311/312: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Material Safety Data Sheet

EB 4L

IMMEDIATE HEALTH HAZARD

SARA SECTION 313: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

<u>COMPONENT</u>	<u>CAS#</u>	<u>% BY WEIGHT</u>
Ethylene Glycol	107-21-1	10-30 %

TSCA STATUS:

All components of this product are listed on the Toxic Substance Control Act Inventory or are excluded from the listing requirements.

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS: This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: D-2A

CANADIAN ENVIRONMENTAL PROTECTION ACT:

All components of this product are listed on the Canadian Domestic Substance List (DSL).

16. OTHER INFORMATION

HMIS RATING – HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0 PERSONAL PROTECTIVE RATING: B

LEGEND: N.A. – NOT APPLICABLE, N.E. - NOT ESTABLISHED, N.D. – NOT DETERMINED

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.