

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

MATERIAL SAFETY DATA SHEET

Product Trade Name: DRILTREAT®

Revision Date: 04-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: DRILTREAT®
 Synonyms: None
 Chemical Family: Lipid
 Application: Oil-wetting Agent

Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Contains no hazardous substances	Mixture	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye irritation.

4. FIRST AID MEASURES

Inhalation: Under normal conditions, first aid procedures are not required.
 Skin: Wash with soap and water.
 Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
 Ingestion: Under normal conditions, first aid procedures are not required.
 Notes to Physician: Not Applicable

5. FIRE

Flash Po
 Flash Po
 Flash Po
 Autoigni
 Autoigni
 Flammab
 Flammab

Fire Extir

Special E

Special P
 Fire-Figh

NFPA Ra
 HMIS Rat

6. ACC

Personal

Environm
 Measures

Procedur
 Absorptio

7. HAN

Handling

Storage In

8. EXPO

Engineerir

Respirator

Hand Prot

Skin Prote

Eye Protec

Other Prec

9. PHYS

Physical St

Color:

Odor:

pH:

Specific Gr

Density @

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	400
Flash Point/Range (C):	204
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 0, Flammability 0, Reactivity 0
HMIS Ratings: Health 0, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures None known.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing.

Storage Information Store away from oxidizers. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally necessary.

Hand Protection Normal work gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Amber
Odor:	Bean
pH:	6.4-7
Specific Gravity @ 20 C (Water=1):	1.03
Density @ 20 C (lbs./gallon):	8.58

9. PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	32
Freezing Point/Range (C):	0
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	0
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Disperses
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	None known.
Skin Contact	None known.
Eye Contact	May cause mild eye irritation.
Ingestion	None known.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined

12. EC

Mobility (

Persisten

Bio-accu

Ecotox

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Acu

Chemical

Other Info

13. DIS

Disposal

Contamin

14. TR

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DOT

Not restr

Canadian

Not restr

ADR

Not restr

Air Tra

ICAO/IAT

Not restr

Sea Tra

IMDG

Not restr

Other S

Carcinogenicity: Not determined
 Genotoxicity: Not determined
 Reproductive / Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air): Not determined
 Persistence/Degradability: Biodegradable
 Bio-accumulation: Not Determined

Ecotoxicological Information
 Acute Fish Toxicity: Not determined
 Acute Crustaceans Toxicity: TLM96: 497,500 ppm (Mysidopsis bahia) SFP @ 12 ppb
 Acute Algae Toxicity: Not determined
 Chemical Fate Information: Not determined
 Other Information: Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method
 Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging
 Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation
 DOT: Not restricted

Canadian TDG
 Not restricted

ADR
 Not restricted

Air Transportation
 ICAO/IATA: Not restricted

Sea Transportation
 IMDG: Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	None
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	Un-Controlled

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative. For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
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Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.
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END OF MSDS



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : EC1118A
CHEMICAL DESCRIPTION : Hydrocarbon solvent
COMPANY IDENTIFICATION : Corrosion Inhibitor

CHINA:	NALCO INDUSTRIAL (SUZHOU) CO., LTD	TEL:86-512-8255001	FAX:86-512-8251030
INDIA:	NALCO INDIA LIMITED	TEL:91-33-2172066	FAX:91-33-2296858
INDONESIA:	PT NALCO INDONESIA	TEL:021-8753175	FAX:021-8753167
KOREA:	NALCO KOREA, LTD	TEL:82-2-789-6961	FAX:82-2-786-3140
MALAYSIA:	NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD	TEL:603-5569 4118	FAX:603-5569 5955
THE PHILIPPINES:	NALCO PHILIPPINES INC.	TEL:063-49-5451550	FAX:063-49-5453442
SINGAPORE:	NALCO PACIFIC PTE LTD	TEL:65-861-4011	FAX:65-862-0850
THAILAND:	NALCO INDUSTRIAL SERVICES (THAILAND) CO., LTD	TEL:66-38-955-160	FAX:66-38-955-166

See section 16 for address information

EMERGENCY TELEPHONE NUMBER : See section 16, for Emergency Telephone Numbers.

NFPA 704M/HMIS RATING

HEALTH: 3/3 FLAMMABILITY: 2/2 REACTIVITY: 0/0 OTHER: 0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous.

Hazardous Substance(s)	CAS NO	% (w/w)
2-Butoxyethanol	111-76-2	1.0-5.0
Cumene	98-82-8	1.0-5.0
Isopropanol	67-63-0	1.0-5.0
Thioglycolic Acid	68-11-1	1.0-5.0
Xylene	1330-20-7	1.0-5.0
Naphthalene	91-20-3	1.0-5.0
Ethylbenzene	100-41-4	10.0-30.0
Isocumene	103-65-1	1.0-5.0
Steam-Cracked Petroleum Distillates	64742-91-2	30.0-60.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER

Corrosive. May cause tissue damage. Combustible. Toxic to aquatic organisms. Do not get in eyes, on skin, on clothing. Do not take internally. Avoid breathing vapor. Use with adequate ventilation. Keep container tightly closed. Keep away from heat. Keep away from sources of ignition-No smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

water. Wear face shield. Wear suitable protective clothing, gloves and eye/face protection. May evolve oxides of carbon (COx) under fire conditions. Combustible Liquid; may form combustible mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition. May evolve oxides of nitrogen (NOx) and sulfur (SOx) under fire conditions. May evolve hydrogen sulfide (H2S) under fire conditions.

PRIMARY ROUTES OF EXPOSURE:

Eye, Skin, Inhalation

HUMAN HEALTH HAZARDS – ACUTE:

EYE CONTACT :

Corrosive. Will cause eye burns and permanent tissue damage.

SKIN CONTACT :

May cause severe irritation or tissue damage depending on the length of exposure and the type of first aid administered.

INGESTION :

Not a likely route of exposure. Corrosive, causes burns to gastro-intestinal tract. Nausea, vomiting and stomach may occur. In severe cases blood may be vomited.

INHALATION :

Irritating to the eyes, nose, throat and lungs.

SYMPTOMS OF EXPOSURE :

Acute :

A review of available data does not identify any symptoms from exposure not previously mentioned.

Chronic :

A review of available data does not identify any symptoms from exposure not previously mentioned.

AGGRAVATION OF EXISTING CONDITIONS :

A review of available data does not identify any worsening of existing conditions.

HUMAN HEALTH HAZARDS - CHRONIC :

This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

4. FIRST AID MEASURES

EYE CONTACT :

PROMPT ACTION IS ESSENTIAL IN CASE OF CONTACT. Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get immediate medical attention.

SKIN CONTACT :

Immediately flush with plenty of water for at least 15 minutes. For a large splash, flood body under a shower. Remove contaminated clothing. Wash off affected area immediately with plenty of water. Get immediate medical attention. Contaminated clothing, shoes, and leather goods must be discarded or cleaned before re-use.

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

INGESTION :

Do not induce vomiting. If conscious, washout mouth and give water to drink. Get medical attention.

INHALATION :

Remove to fresh air, treat symptomatically. Get medical attention.

NOTE TO PHYSICIAN :

Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgment should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : 113 Degree F / 45 Degree C

EXTINGUISHING MEDIA :

Alcohol foam, Carbon dioxide, Dry powder, Other extinguishing agent suitable for Class B fires, For large fires, use water spray or fog, thoroughly drenching the burning material. Keep containers cool by spraying with water.

FIRE AND EXPLOSION HAZARD :

May evolve oxides of carbon (COx) under fire conditions. Combustible Liquid; may form combustible mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition. May evolve oxides of nitrogen (NOx) and sulfur (SOx) under fire conditions. May evolve hydrogen sulfide (H₂S) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Remove sources of ignition. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Wash site of spillage thoroughly with water. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Prevent material from entering sewers or waterways.



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

7. HANDLING AND STORAGE

HANDLING :

Avoid eye and skin contact. Do not take internally. Do not breathe vapors/gases/dust. Do not get in eyes, on skin, on clothing. Have emergency equipment ((for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Keep the containers closed when not in use. Use with adequate ventilation. Do not use in locations where vapor is likely to travel to welding flames or arcs or to other hot surfaces. Vapors are much heavier than air, this can result in uneven distribution.

STORAGE CONDITIONS :

Store the containers tightly closed. Store in suitable labeled containers. Store away from heat and sources of ignition. Store separately from oxidizers. Have appropriate fire extinguishers available in and near the storage area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

ACGIH/TLV :

Substance(s)

2-Butoxyethanol	TWA: 25 ppm, 121 mg/m3 (skin)
Cumene	TWA: 50 ppm, 246 mg/m3 (skin)
Isopropanol	TWA: 400 ppm , 983 mg/m3 STEL: 500 ppm , 1,230 mg/m3
Thioglycolic Acid	TWA: 1 ppm, 3.8 mg/m3 (skin)
Xylene	TWA: 100 ppm, 434 mg/m3 STEL: 150 ppm, 651 mg/m3
Naphthalene	TWA: 10 ppm, 52 mg/m3 STEL: 15 ppm, 79 mg/m3
Ethylbenzene	TWA: 100 ppm, 434 mg/m3 STEL: 125 ppm, 543 mg/m3

OSHA/PEL :

Substance(s)

2-Butoxyethanol	TWA: 25 ppm, 120 mg/m3 (skin)
Cumene	TWA: 50 ppm , 245 mg/m3 (skin)
Isopropanol	TWA: 400 ppm , 980 mg/m3 STEL: 500 ppm , 1,225 mg/m3



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

Xylene	TWA: 100 ppm, 435 mg/m ³ STEL: 150 ppm, 655 mg/m ³
Naphthalene	TWA: 10 ppm, 50 mg/m ³ STEL: 15 ppm, 75mg/m ³
Ethylbenzene	TWA: 100 ppm, 435 mg/m ³ STEL: 125 ppm, 545 mg/m ³

ENGINEERING MEASURES :

Use general ventilation with local exhaust ventilation.

RESPIRATORY PROTECTION :

If significant mists, vapors or aerosols are generated an approved respirator is recommended. Wear an organic vapor/mist respirator when spraying. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

Polyvinyl alcohol gloves, Viton gloves

SKIN PROTECTION :

Wear chemical resistant apron, chemical splash goggles, impervious gloves and boots. A full slicker suit is recommended if gross exposure is possible

EYE PROTECTION :

Wear face shield with chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Eye wash station and safety shower are necessary. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :

Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Amber
ODOR	Hydrocarbon
DENSITY	7.65 lb/gal
SPECIFIC GRAVITY	0.92 @ 60 Degree F / 15.6 Degree C
SOLUBILITY IN WATER	Complete
VISCOSITY	5.3 cst @ 100 Degrees F / 37.8 Degree C

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MATERIAL SAFETY DATA SHEET

PRODUCT

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10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Heat and sources of ignition including static discharges.

MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS

No toxicity studies have been conducted on this product.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: High

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: High

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**MATERIAL SAFETY DATA SHEET**

PRODUCT

EC1118A**13. DISPOSAL CONSIDERATIONS**

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.

NATIONAL REGULATIONS, CHINA
Comply with local regulations.

NATIONAL REGULATIONS, INDIA
Dispose of unused product in accordance with the "Hazardous Wastes (Management and Handling) Rules 1989" and local and State legislation, as applicable.

NATIONAL REGULATIONS, INDONESIA
Dispose of unused product in accordance with "Government Regulation No. 19/1994 On the Treatment of Dangerous And Toxic Waste" (and amendments) as applicable.

NATIONAL REGULATIONS, KOREA
Waste disposal should comply with the Waste Control Act.

NATIONAL REGULATIONS, MALAYSIA
Dispose of in accordance with the Environmental Quality (Scheduled Wastes) Regulation 1989 and other guidelines issued by DOE and /or local authorities.

NATION REGULATIONS, PHILIPPINES
Dispose of inn accordance with Presidential Decree No. 984-1976 ("The Pollution Control Law"); DENR Department Administrative Order No.29-92 ("The Implementing Rules or regulations of RA6969") and Presidential Decree No. 825.

NATIONAL REGULATIONS, SINGAPORE
Dispose of waste in accordance with the Environmental Health Act (Chapter 95, Rg 11), Environmental Public Health (Toxic Industrial Waste) Regulations 1990 Ed.

NATIONAL REGULATIONS, THAILAND
Dispose of hazardous waste in accordance with the "The Notification of the Ministry of Industry No. 6B.E.2450, Subject: Disposal of Wastes or Unusable Materials", he Notification of the Ministry of Industry No. 1B.E. 2451, Subject : Disposal of Wastes or Unusable Materials".

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are:

LAND TRANSPORT :

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

NATIONAL REGULATIONS, CHINA



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

Comply with local regulations.

NATIONAL REGULATIONS, INDIA

Transport in accordance with the Central Motor Vehicles Rules 1989.

NATIONAL REGULATIONS, INDONESIA

Transport in accordance with all government regulations, including "Regulation of the Minister of Health No. 453/Man.Kes/PER/XI/1983 on Dangerous Substances", as applicable.

NATIONAL REGULATIONS, KOREA

Land transport should comply with the Ministerial Decree of Toxic Chemicals Control Law and the Regulations Regarding the Fire Fighting Techniques Standards, as applicable.

NATIONAL REGULATIONS, MALAYSIA

There are no regulations specifically governing the transport of chemicals. Use best practice.

NATIONAL REGULATIONS, PHILIPPINES

Transport in accordance with the following legislation (as applicable): Presidential Decree No. 1185, 1997 ("Fire code of the Philippines") and implementing rules and regulations; Presidential Decree No. 856, 1975 ("Code of Sanitation"); Republic Act No 6969, 1990 ("Toxic Substances and Hazardous and Nuclear Wastes Control Act") and implementing rules and regulations.

NATIONAL REGULATIONS, SINGAPORE

Land Transport complies with the Environmental Pollution Control (Hazardous Substances) Regulations 1999, which follows the "Specification for Caution Labeling for Hazardous Substances" – Singapore Standard 286 (1984)

NATIONAL REGULATIONS, THAILAND

The product should be transported in accordance with "Hazardous Substances Acts B.E.2535", "Notification of Ministry of Public Health Re:Label and level of Toxicity of Dangerous Articles Which are Under the Responsibility of Food and Drug Administration 2534 (If applicable)" and "Notification of land transportation department, subject: label of truck which contain hazardous material, Notification date: 14 November B.E. 2543 (14 November 2000)".

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

NATIONAL REGULATIONS, EUROPE AND MALAYSIA

European:

CLASSIFICATION: This product is not classified as hazardous (European Directive 88/379/EEC).

RISK PHRASES: None



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

Malaysian:

CLASSIFICATION: This product is not classified as hazardous, however, we recommend the following safety instructions:

SAFETY PHRASES:

- S24/25 Avoid contact with skin and eyes.
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S37/39 Wear suitable gloves and eye/face protection.

INTERNATIONAL REGULATIONS:

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act:
When use situations necessitate compliance with FDA regulations, this product is acceptable under: 21-CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty foods and 21 CFR 176.180 Components of paper and paperboard in contact with dry foods.

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

NFPA RATING

HEALTH : 0 FLAMMABILITY : 1 REACTIVITY : 0 OTHER:
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

INTERNATIONAL CHEMICAL CONTROL LAWS

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The chemical substances in this product are on the TSCA 8(b) Inventory (40 CFR 710).

EUROPE

All substance in this product comply with the notification requirements of the European Commission Directive 67/548/EEC and amendments and are listed on the European Inventory of Existing Commercial Substances (EINECS).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and are listed on the Australian Inventory of Chemical Substances (AICS).

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

All substances in this product are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

JAPAN

All substances in this product comply with the Law Regulation the Manufacture and Importation Of Chemical Substances and are listed on the Ministry of International Trade & Industry List (MITI)

KOREA

**MATERIAL SAFETY DATA SHEET**

PRODUCT

EC1118A

All substances in this product comply with the Toxic Chemical Control Law (TCCT) and are listed on the Existing Chemicals List (ECL)

THE PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippine Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

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, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

ADDRESS AND CONTACT POINTS:

NALCO INDUSTRIAL (SUZHOU) CO., LTD; 88 Ta Yuan Road, Suzhou New Development Zone, Jiangsu 215011
PRC Contact: Sam Chen, 86-512-8255001

NALCO INDIA LIMITED; 20/A Park St, Calcutta 700016 India

PT NALCO INDONESIA; Jl Pahlawan Desa Karang Asem Timur. Citerup, Bogor.

NALCO KOREA, LTD; 11th Fl, 63 BLDG, 60, Yoido-dong Young Deung Po-Gu, Seoul, Korea

NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD; 1 Jalan Jururancang U1/21, Section U1 Hicom-Glenmarie Industrial Park, 40150 Shah Alam, Selangor Darul Ehsan, Malaysia

NALCO PHILIPPINES INC.; Barrio Real, Calamba, Laguna, Philippines

NALCO PACIFIC PTE LTD; 21 Gul Lane, Jurong Town, Singapore 629416

NALCO INDUSTRIAL SERVICES (THAILAND) CO., LTD; Rayong Plant, 109/19 Moo 4, Eastern Seaboard Industrial Estate, Soi ESIE 6, T. Pluakdaeng, A. Pluakdaeng Rayong 21140 Thailand

EMERGENCY TELEPHONE NUMBER:

CHINA:	0-512-8255001
KOREA:	0-789-6961
INDIA:	0-33-6740395
INDONESIA:	021-8753175
MALAYSIA:	603-5569 4118
THE PHILIPPINES:	063-49-5451550
SINGAPORE:	65-861-4011
THAILAND:	038-955-160

Nalco Energy Services, L.P. P.O. Box 87 • Sugar Land, Texas 77487-0087

(281)263-7000

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC1118A

Prepared By : Nalco Pacific EH&S, Product Safety Specialist

Date issued : 07/19/2000

Replaces : 17/07/2002

Draft



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1122A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : EC1122A
APPLICATION : CORROSION INHIBITOR
COMPANY IDENTIFICATION : Nalco Energy Services, L.P.
P.O. Box 87
Sugar Land, Texas
77487-0087

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 1/2 FLAMMABILITY : 3/3 INSTABILITY : 0/0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Cumene	98-82-8	1.0 - 5.0
Isopropanol	67-63-0	5.0 - 10.0
Xylene	1330-20-7	1.0 - 5.0
Naphthalene	91-20-3	1.0 - 5.0
Ethylbenzene	100-41-4	5.0 - 10.0
Isocumene	103-65-1	1.0 - 5.0
Steam-Cracked Petroleum Distillates	64742-91-2	30.0 - 60.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING

Flammable. Irritating to eyes and skin.

Keep away from heat. Keep away from sources of ignition - No smoking. Keep container tightly closed. Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Use with adequate ventilation. Do not take internally. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water.

Wear suitable protective clothing, gloves and eye/face protection.

Flammable Liquid; may release vapors that form flammable mixtures at or above the flash point. Vapors can travel to a source of ignition and flash back. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition. May evolve oxides of carbon (COx) under fire conditions.

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PRIMARY ROUTES OF EXPOSURE :

Eye, Skin, Inhalation

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Can cause mild irritation.

SKIN CONTACT :

Can cause moderate irritation.

INGESTION :

Not a likely route of exposure. May cause nausea and vomiting. Can cause chemical pneumonia if aspirated into lungs following ingestion. Can cause central nervous system depression.

INHALATION :

Repeated or prolonged exposure may irritate the respiratory tract.

SYMPTOMS OF EXPOSURE :

Acute :

Inhalation of high concentrations of organic solvents can cause nausea, dizziness, vomiting, stupor or unconsciousness.

Chronic :

Frequent or prolonged contact with product may defat and dry the skin, leading to discomfort and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS :

Skin contact may aggravate an existing dermatitis condition.

HUMAN HEALTH HAZARDS - CHRONIC :

This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans). This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

4. FIRST AID MEASURES

EYE CONTACT :

Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get immediate medical attention.

SKIN CONTACT :

Immediately wash with plenty of soap and water. Get medical attention.

INGESTION :

Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. If conscious, washout mouth and give water to drink. Get medical attention.



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INHALATION :

Remove to fresh air, treat symptomatically. Get medical attention.

NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : 79 °F / 26.1 °C

EXTINGUISHING MEDIA :

Alcohol foam, Carbon dioxide, Foam, Dry powder, Other extinguishing agent suitable for Class B fires, For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers.

UNSUITABLE EXTINGUISHING MEDIA :

Do not use water unless flooding amounts are available.

FIRE AND EXPLOSION HAZARD :

Flammable Liquid; may release vapors that form flammable mixtures at or above the flash point. Vapors can travel to a source of ignition and flash back. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition. May evolve oxides of carbon (COx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Remove sources of ignition. Stop or reduce any leaks if it is safe to do so. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Prevent material from entering sewers or waterways.

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MATERIAL SAFETY DATA SHEET

PRODUCT

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7. HANDLING AND STORAGE

HANDLING :

Use with adequate ventilation. Keep the containers closed when not in use. Do not use in locations where vapor is likely to travel to welding flames or arcs or to other hot surfaces. Vapors are much heavier than air, this can result in uneven distribution. Do not take internally. Do not breathe vapors/gases/dust. Do not get in eyes, on skin, on clothing. Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE CONDITIONS :

Store away from heat and sources of ignition. Store separately from oxidizers. Store the containers tightly closed. Connections must be grounded to avoid electrical charges. Have appropriate fire extinguishers available in and near the storage area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

ACGIH/TLV :

Substance(s)

Cumene TWA: 50 ppm , 246 mg/m³ (Skin)

Isopropanol TWA: 400 ppm , 983 mg/m³
STEL: 500 ppm , 1,230 mg/m³

Xylene TWA: 100 ppm , 434 mg/m³
STEL: 150 ppm , 651 mg/m³

Naphthalene TWA: 10 ppm , 52 mg/m³
STEL: 15 ppm , 79 mg/m³

Ethylbenzene TWA: 100 ppm , 434 mg/m³
STEL: 125 ppm , 543 mg/m³

OSHA/PEL :

Substance(s)

Cumene TWA: 50 ppm , 245 mg/m³ (Skin)

Isopropanol TWA: 400 ppm , 980 mg/m³
STEL: 500 ppm , 1,225 mg/m³

Xylene TWA: 100 ppm , 435 mg/m³
STEL: 150 ppm , 655 mg/m³

Naphthalene TWA: 10 ppm , 50 mg/m³
STEL: 15 ppm , 75 mg/m³

Ethylbenzene TWA: 100 ppm , 435 mg/m³



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STEL: 125 ppm , 545 mg/m3

ENGINEERING MEASURES :

Use general ventilation with local exhaust ventilation.

RESPIRATORY PROTECTION :

If significant mists, vapors or aerosols are generated an approved respirator is recommended. An organic vapor cartridge with dust/mist prefilter or supplied air may be used. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

Nitrile gloves, Viton# gloves, Polyvinyl alcohol gloves

SKIN PROTECTION :

Wear impervious apron and boots.

EYE PROTECTION :

Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :

Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Amber
ODOR	Hydrocarbon
SPECIFIC GRAVITY	0.91 @ 60 °F / 15.6 °C
DENSITY	7.56 lb/gal
SOLUBILITY IN WATER	Insoluble
VAPOR PRESSURE	31 mm Hg

Note: These physical properties are typical values for this product and are subject to change.

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10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Heat and sources of ignition including static discharges.

MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans). This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

No toxicity studies have been conducted on this product.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: High

If released into the environment, see CERCLA/SUPERFUND in Section 15.

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13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: D001, D018

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT :

Proper Shipping Name : FLAMMABLE LIQUID, N.O.S.
Technical Name(s) : ISOPROPANOL
UN/ID No : UN 1993
Hazard Class - Primary : 3
Packing Group : III

Flash Point : 26.1 °C / 79 °F

DOT Reportable Quantity (per package) : 3,160 lbs
DOT RQ Component : XYLENE

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name : FLAMMABLE LIQUID, N.O.S.
Technical Name(s) : ISOPROPANOL
UN/ID No : UN 1993
Hazard Class - Primary : 3
Packing Group : III
IATA Cargo Packing Instructions : 310
IATA Cargo Aircraft Limit : 220 L (Max net quantity per package)

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name : FLAMMABLE LIQUID, N.O.S.
Technical Name(s) : ISOPROPANOL
UN/ID No : UN 1993
Hazard Class - Primary : 3
Packing Group : III

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MATERIAL SAFETY DATA SHEET

PRODUCT

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15. REGULATORY INFORMATION

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Cumene : Irritant
Isopropanol : Flammable, Eye irritant
Xylene : Flammable, Irritant
Naphthalene : Skin irritant, Combustible., Cancer suspect agent (refer to Section 3)
Ethylbenzene : Flammable, Irritant, Cancer suspect agent (refer to Section 3)
Isocumene : Irritant
Steam-Cracked Petroleum Distillates : Skin irritant, Combustible.

CERCLA/SUPERFUND, 40 CFR 117, 302 :

This product contains the following Reportable Quantity (RQ) Substance. Also listed is the RQ for the product. If a reportable quantity of product is released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D.C. (1-800-424-8802).

<u>RQ Substance</u>	<u>RQ</u>
Xylene	3,160 lbs

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

X	Immediate (Acute) Health Hazard
X	Delayed (Chronic) Health Hazard
X	Fire Hazard
	Sudden Release of Pressure Hazard
	Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product contains the following substance(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals



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Hazardous Substance(s)	CAS NO	% (w/w)
Cumene	98-82-8	1.0 - 5.0
Xylene	1330-20-7	1.0 - 5.0
Naphthalene	91-20-3	1.0 - 5.0
Ethylbenzene	100-41-4	5.0 - 10.0

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :

This product contains the following substances listed in the regulation:

Substance(s)	Citations
<ul style="list-style-type: none"> Naphthalene Ethylbenzene 	Sec. 307, Sec. 311
<ul style="list-style-type: none"> Xylene 	Sec. 311

CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

This product contains the following substances listed in the regulation:

Substance(s)	Citations
<ul style="list-style-type: none"> Isopropanol 	Sec. 111
<ul style="list-style-type: none"> Cumene Xylene Ethylbenzene 	Sec. 111, Sec. 112
<ul style="list-style-type: none"> Naphthalene 	Sec. 112

CALIFORNIA PROPOSITION 65 :

This product contains the following substances which require warning under California Proposition 65.

Substance(s)	Concentration	EFFECTS
<ul style="list-style-type: none"> Naphthalene Ethylbenzene 	5 % 10 %	Causes Cancer

MICHIGAN CRITICAL MATERIALS :

This product contains the following substances listed in the regulation:

- Xylene
- Naphthalene
- Ethylbenzene

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MATERIAL SAFETY DATA SHEET

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STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Cumene	98-82-8
Isopropanol	67-63-0
Xylene	1330-20-7
Naphthalene	91-20-3
Ethylbenzene	100-41-4
Isocumene	103-65-1

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :

B2 - Flammable Liquids, D2B - Materials Causing Other Toxic Effects - Toxic Material, D2A - Materials Causing Other Toxic Effects - Very Toxic Material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Moderate

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

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, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC1122A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk-Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department
Date issued : 02/20/2004
Version Number : 1.6

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1.

PRODU

CHEMIC

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CHINA:

INDONESIA:

KOREA:

MALAYSIA:

THE PHILIP

SINGAPORE:

THAILAND:

EMERGE

NFPA 704

HEALTH

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2.

Our hazard

trade secret

hazard(s).

Acetic acid

Imidazolin

Quaternar

Thioglycol



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1304A

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : EC1304A

CHEMICAL DESCRIPTION : Quaternary and imidazoline salts in water

COMPANY IDENTIFICATION :

CHINA:	NALCO INDUSTRIAL (SUZHOU) CO., LTD	TEL:86-512-8255001	FAX:86-512-8251030
INDIA:	NALCO INDIA LIMITED	TEL:91-33-2172066	FAX:91-33-2296858
INDONESIA:	PT NALCO INDONESIA	TEL:021-8753175	FAX:021-8753167
KOREA:	NALCO KOREA, LTD	TEL:82-2-789-8961	FAX:82-2-786-3140
MALAYSIA:	NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD	TEL:603-5569 4118	FAX:603-5569 5955
THE PHILIPPINES:	NALCO PHILIPPINES INC.	TEL:063-49-5451550	FAX:063-49-5453442
SINGAPORE:	NALCO PACIFIC PTE LTD	TEL:65-861-4011	FAX:65-862-0850
THAILAND:	NALCO INDUSTRIAL SERVICES (THAILAND) CO., LTD	TEL:66-38-955-160	FAX:66-38-955-166

See section 16 for address information

EMERGENCY TELEPHONE NUMBER : See section 16, for Emergency Telephone Numbers.

NFPA 704M/HMIS RATING

HEALTH : 3 / 3 FLAMMABILITY : 2 / 2 REACTIVITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous. One or more is being claimed as a trade secret under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Acetic acid	64-19-7	Less than 1
Imidazoline salts	Proprietary	5-10
Quaternary ammonium salt	Proprietary	1-5
Thioglycolic acid	68-11-1	1-5



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1304A

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

DANGER

Causes burns to skin and eyes. Combustible. Prolonged inhalation of vapor may be harmful. Do not get in eyes, on skin, or on clothing. Wear goggles, face shield and protective gloves when handling. Avoid prolonged or repeated breathing of vapor. Use with adequate ventilation. Do not take internally. Keep away from heat and open flame. Keep container closed when not in use.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin, Inhalation

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Corrosive to the eyes with possible permanent damage depending on the length of exposure and on the first aid action given.

SKIN CONTACT :

Corrosive to the skin, possibly resulting in third degree burns, depending on the length of exposure and on the first aid action given. Can cause allergic contact dermatitis in susceptible individuals.

INGESTION :

Can cause central nervous system depression, nausea, dizziness, vomiting or unconsciousness depending on the length of exposure and on the first aid action given.

INHALATION :

Prolonged inhalation of mist or vapor may cause nausea, dizziness, light-headedness, vomiting or unconsciousness depending on the length of exposure and the first aid action given.

SYMPTOMS OF EXPOSURE :

Acute :

Inhalation of high concentrations of product can cause nausea, dizziness, vomiting, stupor or unconsciousness.

Chronic :

Prolonged skin contact with product can cause dry skin and defatting resulting in irritation and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS :

Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.



MATERIAL SAFETY DATA SHEET

PRODUCT

EC1304A

4. FIRST AID MEASURES

EYE CONTACT :

Immediately flush for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN CONTACT :

Immediately flush with water for at least 15 minutes. For a large splash, flood body under a shower. Call a physician at once.

INGESTION :

Do not induce vomiting. Give water. Call a physician at once.

INHALATION :

Remove to fresh air, treat symptomatically. Get medical attention.

NOTE TO PHYSICIAN :

Probable mucosal damage may contraindicate the use of gastric lavage. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

5. FIRE FIGHTING MEASURES

FLASH POINT : 146°F (TOC)

EXTINGUISHING MEDIA :

Based on the NFPA guide, use dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drenching the burning material.

UNUSUAL FIRE AND EXPLOSION HAZARD: None

6. ACCIDENTAL RELEASE MEASURES

SPILL CONTROL AND RECOVERY:

Small liquid spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 15.

Large liquid spills: Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 15.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 8.

Keep the spill away from heat, sparks, flames and welding operations. Ventilate area and evacuate employees from exposure if the airborne concentration exceeds the TLV. Refer to Section 15.

**MATERIAL SAFETY DATA SHEET**

PRODUCT

EC1304A

7. HANDLING AND STORAGE**STORAGES :**

Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended (organic vapor cartridge, black).

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

VENTILATION: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

PROTECTIVE EQUIPMENT: Wear impermeable gloves, boots, apron and a face shield with chemical splash goggles. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed). A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower is recommended.

If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Clear Amber
SPECIFIC GRAVITY	1.00 @ 60 Degrees F
DENSITY	8.3 lb/gal
SOLUBILITY IN WATER	Soluble
FLASH POINT	146° F (TCC)

10. STABILITY AND REACTIVITY

INCOMPATIBILITY: Avoid contact with strong oxidizers (eg. chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

THERMAL DECOMPOSITION PRODUCTS: In the event of combustion CO, CO₂, may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

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**MATERIAL SAFETY DATA SHEET**

PRODUCT

EC1304A

12. ECOLOGICAL INFORMATION

If released into the environment, see CERCLA in Section 15.

13. DISPOSAL CONSIDERATIONS

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.

NATIONAL REGULATIONS, CHINA
Comply with local regulations.

NATIONAL REGULATIONS, INDIA
Dispose of unused product in accordance with the "Hazardous Wastes (Management and Handling) Rules 1989" and local and State legislation, as applicable.

NATIONAL REGULATIONS, INDONESIA
Dispose of unused product in accordance with "Government Regulation No. 19/1994 On the Treatment of Dangerous And Toxic Waste" (and amendments) as applicable.

NATIONAL REGULATIONS, KOREA
Waste disposal should comply with the Waste Control Act.

NATIONAL REGULATIONS, MALAYSIA
Dispose of in accordance with the Environmental Quality (Scheduled Wastes) Regulation 1989 and other guidelines issued by DOE and /or local authorities.

NATION REGULATIONS, PHILIPPINES
Dispose of inn accordance with Presidential Decree No. 984-1976 ("The Pollution Control Law"); DENR Department Administrative Order No.29-92 ("The Implementing Rules or regulations of RA6969") and Presidential Decree No. 825.

NATIONAL REGULATIONS, SINGAPORE
Dispose of waste in accordance with the Environmental Health Act (Chapter 95, Rg 11), Environmental Public Health (Toxic Industrial Waste) Regulations 1990 Ed.

NATIONAL REGULATIONS, THAILAND
Dispose of hazardous waste in accordance with the "The Notification of the Ministry of Industry No. 6B.E.2450, Subject: Disposal of Wastes or Unusable Materials", he Notification of the Ministry of Industry No. 1B.E. 2451, Subject: Disposal of Wastes or Unusable Materials".

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are:

**MATERIAL SAFETY DATA SHEET**

PRODUCT

EC1304A**LAND TRANSPORT :**

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

NATIONAL REGULATIONS, CHINA

Comply with local regulations.

NATIONAL REGULATIONS, INDIA

Transport in accordance with the Central Motor Vehicles Rules 1989.

NATIONAL REGULATIONS, INDONESIA

Transport in accordance with all government regulations, including "Regulation of the Minister of Health No. 453/Man.Kes/PER/XI/1983 on Dangerous Substances", as applicable.

NATIONAL REGULATIONS, KOREA

Land transport should comply with the Ministerial Decree of Toxic Chemicals Control Law and the Regulations Regarding the Fire Fighting Techniques Standards, as applicable.

NATIONAL REGULATIONS, MALAYSIA

There are no regulations specifically governing the transport of chemicals. Use best practice.

NATIONAL REGULATIONS, PHILIPPINES

Transport in accordance with the following legislation (as applicable): Presidential Decree No. 1185, 1997 ("Fire code of the Philippines") and implementing rules and regulations; Presidential Decree No. 856, 1975 ("Code of Sanitation"); Republic Act No 6969, 1990 ("Toxic Substances and Hazardous and Nuclear Wastes Control Act") and implementing rules and regulations.

NATIONAL REGULATIONS, SINGAPORE

Land Transport complies with the Environmental Pollution Control (Hazardous Substances) Regulations 1999, which follows the "Specification for Caution Labeling for Hazardous Substances" – Singapore Standard 286 (1984)

NATIONAL REGULATIONS, THAILAND

The product should be transported in accordance with "Hazardous Substances Acts B.E.2535", "Notification of Ministry of Public Health Re: Label and level of Toxicity of Dangerous Articles Which are Under the Responsibility of Food and Drug Administration 2534 (If applicable)" and "Notification of land transportation department, subject: label of truck which contain hazardous material, Notification date: 14 November B.E. 2543 (14 November 2000)".

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION**NATIONAL REGULATIONS, EUROPE AND MALAYSIA**

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC1304A

European:

CLASSIFICATION: This product is not classified as hazardous (European Directive 88/379/EEC).

RISK PHRASES: None

Malaysian:

CLASSIFICATION: This product is not classified as hazardous, however, we recommend the following safety instructions:

SAFETY PHRASES:

S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advise
S37/39 Wear suitable gloves and eye/face protection.

INTERNATIONAL REGULATIONS:

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act:
When use situations necessitate compliance with FDA regulations, this product is acceptable under: 21-CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty foods and 21 CFR 176.180 Components of paper and paperboard in contact with dry foods.

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

NFPA RATING

HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0 OTHER: 0
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

INTERNATIONAL CHEMICAL CONTROL LAWS

TOXIC SUBSTANCES CONTROL ACT (TSCA)

The chemical substances in this product are on the TSCA 8(b) Inventory (40 CFR 710).

EUROPE

All substance in this product complies with the notification requirements of the European Commission Directive 67/548/EEC and amendments and is listed on the European Inventory of Existing Commercial Substances (EINECS).

AUSTRALIA

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and are listed on the Australian Inventory of Chemical Substances (AICS).

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)

All substances in this product are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

**MATERIAL SAFETY DATA SHEET**

PRODUCT

EC1304A

JAPAN

All substances in this product comply with the Law Regulation the Manufacture and Importation Of Chemical Substances and are listed on the Ministry of International Trade & Industry List (MITI)

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCCT) and are listed on the Existing Chemicals List (ECL)

THE PHILIPPINES

All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippine Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

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, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

ADDRESS AND CONTACT POINTS:

NALCO INDUSTRIAL (SUZHOU) CO., LTD; 88 Ta Yuan Road, Suzhou New Development Zone, Jiangsu 215011
PRC Contact: Sam Chen, 86-512-8255001

NALCO INDIA LIMITED; 20/A Park St, Calcutta 700016 India

PT NALCO INDONESIA; Jl Pahlawan Desa Karang Asem Timur. Citerup, Bogor.

NALCO KOREA, LTD; 11th Fl, 63 BLDG, 60, Yoido-dong Young Deung Po-Gu, Seoul, Korea

NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD; 1 Jalan Jururancang U1/21, Section U1 Hicom-Glenmarie Industrial Park, 40150 Shah Alam, Selangor Darul Ehsan, Malaysia

NALCO PHILIPPINES INC.; Barrio Real, Calamba, Laguna, Philippines

NALCO PACIFIC PTE LTD; 21 Gul Lane, Jurong Town, Singapore 629416

NALCO INDUSTRIAL SERVICES (THAILAND) CO., LTD; Rayong Plant, 109/19 Moo 4, Eastern Seaboard Industrial Estate, Soi ESIE 6, T. Pluakdaeng, A. Pluakdaeng Rayong 21140 Thailand

EMERGENCY TELEPHONE NUMBER:

CHINA:	0-512-8255001
KOREA:	0-789-6961
INDIA:	0-33-6740395
INDONESIA:	021-8753175
MALAYSIA:	603-5569 4118

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC1304A

THE PHILIPPINES: 063-49-5451550
SINGAPORE: 65-861-4011
THAILAND: 038-955-160

Prepared By : Nalco Pacific EH&S, Product Safety Specialist
Date issued : 18/11/1996
Replaces : 13/06/2002

Draft



MATERIAL SAFETY DATA SHEET

PRODUCT

EC6264A

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : EC6264A

APPLICATION: Scale Inhibitor

COMPANY IDENTIFICATION :

CHINA:	NALCO INDUSTRIAL (SUZHOU) CO., LTD	TEL:86-512-8255001	FAX:86-512-8251000
INDIA:	NALCO INDIA LIMITED	TEL:91-33-2172066	FAX:91-33-2296858
INDONESIA:	PT NALCO INDONESIA	TEL:021-8753175	FAX:021-8753167
KOREA:	NALCO KOREA LIMITED	TEL:82-2-789-6961	FAX:82-2-786-3140
MALAYSIA:	NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD	TEL:603-5569 4118	FAX:603-5569 5955
THE PHILIPPINES:	NALCO PHILIPPINES INC.	TEL:063-49-5451550	FAX:063-49-5453442
SINGAPORE:	NALCO PACIFIC PTE LTD	TEL:65-861-4011	FAX:65-862-0850
THAILAND:	NALCO INDUSTRIAL SERVICES (THAILAND) CO., LTD	TEL:66-38-955-160	FAX:66-38-955-166

See section 16 for address information

EMERGENCY TELEPHONE NUMBER : See section 16, for Emergency Telephone Numbers.

2. HAZARDOUS INGREDIENT INFORMATION

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse.

This product is hazardous as defined in 29CFR1910.1200, based on the following compositional information:

COMPONENT	OSHA HAZARD
Phosphonic Acid Ester, Sodium Chloride	Eye Irritant

For additional information see Section 3.

3. HEALTH INFORMATION AND PROTECTION

NATURE OF HAZARD

EYE CONTACT:
Irritating, and may injure eye tissue if not removed promptly.

SKIN CONTACT:
Low order of toxicity.
Frequent or prolonged contact may irritate.

INHALATION:
Low order of toxicity.
Vapors and/or aerosols which may be formed at elevated temperatures may be irritating to eyes and respiratory tract.

INGESTION:



MATERIAL SAFETY DATA SHEET

PRODUCT

EC6264A

May cause vomiting.

Can cause gastrointestinal irritation nausea, headache, or weakness; formation of methemoglobin resulting in shortness of breath; anemia; low blood pressure with dizziness. Fatalities have resulted from ingestion of as little as 2 grams of this nitrite.

FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water for at least 15 minutes. Get prompt medical attention.

SKIN CONTACT:

Flush with large amounts of water; use soap if available. If irritation persists, seek medical attention.

INHALATION:

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

INGESTION:

First aid is normally not required.

WORKPLACE EXPOSURE LIMITS

No workplace exposure limits have been established for this product.

PRECAUTIONS

PERSONAL PROTECTION

For open systems where contact is likely, wear long sleeves, chemical resistant gloves, and chemical goggles. Where contact may occur, wear safety glasses with side shields.

Where overexposure by inhalation may occur and engineering, work practice or other means of exposure reduction are not adequate, approved respirators may be necessary.

VENTILATION

Ventilation should be provided to control worker exposures and prevent health risk.

4. FIRE & EXPLOSION HAZARD

FLASHPOINT: 210 Deg F. METHOD: Seta CC NOTE: Greater than 210

FLAMMABLE LIMITS: Not Available

AUTOIGNITION TEMPERATURE: NOTE: Not available

GENERAL HAZARD

Low Hazard, liquid can burn upon heating to temperatures at or above the flashpoint.

Toxic gases will form upon combustion.

"Empty" containers retain product residue (liquid and/or vapor) 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.



MATERIAL SAFETY DATA SHEET

PRODUCT

EC6264A

Empty drums should be completely drained, properly bunged and promptly re-turned to a drum reconditioner, or properly disposed of.

FIRE FIGHTING

Use water spray to cool fire exposed surfaces and to protect personnel.
Isolate "fuel" supply from fire.
Use alcohol type foam, dry chemical or water spray to extinguish fire.
Respiratory and eye protection required for fire fighting personnel.

HAZARDOUS COMBUSTION PRODUCTS

Smoke, fumes, carbon monoxide, carbon dioxide.

5. SPILL CONTROL PROCEDURE

LAND SPILL

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 7) notify the National Response Center. Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Recover by pumping or with a suitable absorbent.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

WATER SPILL

Prevent additional discharge of material, if possible to do so without hazard. Advise authorities.
Consult Health Information and Protection (Section 3) regarding possible hazards.
Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

6. NOTES

NOTES:

HAZARD RATING SYSTEMS:

This information is for people trained in:
National Paint & Coatings Association's (NPCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704	KEY
HEALTH	1	2	4 = Severe
FLAMMABILITY	1	1	3 = Serious
REACTIVITY	0	0	2 = Moderate
			1 = Slight
			0 = Minimal

7. REGULATORY INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):



MATERIAL SAFETY DATA SHEET

PRODUCT

EC6264A

DOT SHIPPING DESCRIPTION: NO D.O.T. LABELS REQUIRED,

FLASHPOINT: 210 Deg F. METHOD: Seta CC NOTE: Greater than 210

TSCA:

Components of this product are listed on the TSCA Inventory.

CERCLA:

If this product is accidentally spilled, it is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act. We recommend you contact local authorities to determine if there may be other local reporting requirements.

SARA TITLE III:

Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories: Immediate health.

This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

This product does not contain Section 313 Reportable Ingredients.

8. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Specific Gravity (@ F):	1.38 at 68 Not available
APPEARANCE	Clear Yellow liquid
Vapor Pressure (mmHg @ F):	Not available
DENSITY	11.5 lbs/gal at 60
SOLUBILITY IN WATER	Soluble
pH	8.3
VISCOSITY(cSt @ F)	82 at 100
FREEZING/MELTING POINT/RANGE (F):	-15 Pour Point
Evaporation Rate (n-Bu Acetate=1)	Not available
Boiling Point/Range (F)	Not available
Specific Gravity of Vapor (@ 1 atm. Air = 1)	Not available

9. REACTIVITY DATA

This product is stable and hazardous polymerization will not occur.
Conditions to avoid Instability: None
Conditions to avoid Hazardous Polymerization: Not Applicable
Materials & Conditions to avoid Incompatibility: Strong Oxidizing Agents
Hazardous Decomposition Products: None

10. STORAGE & HANDLING

Electrostatic Accumulation Hazard? Unknown, use proper grounding procedure
Storage Temperature (F): Ambient



MATERIAL SAFETY DATA SHEET

PRODUCT

EC6264A

Storage Pressure (mmHg): Atmospheric
Loading Temperature (F): Ambient
Loading Viscosity (cSt @ F): Not available

11. OTHER INFORMATION

Not Applicable.

REVISION SUMMARY:

Since September 11, 1993 this MSDS has been revised in Section(s): 7

HDHA-A-73349 REVISION: September 11, 1993 SUPERSEDES: September 11, 1993

FOR ADDITIONAL PRODUCT INFORMATION, CONTACT YOUR TECHNICAL SALES REPRESENTATIVE
FOR ADDITIONAL HEALTH/SAFETY INFORMATION, CALL 713-670-1705

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the users responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC6509A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : EC6509A

APPLICATION : PARAFFIN CHEMICAL

COMPANY IDENTIFICATION :
Nalco Energy Services, L.P.
P.O. Box 87
Sugar Land, Texas
77487-0087

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING

HEALTH : 1 / 2 FLAMMABILITY : 2 / 2 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Heavy Aromatic Naphtha	64742-94-5	60.0 - 100.0
Xylene	1330-20-7	1.0 - 5.0
Naphthalene	91-20-3	5.0 - 10.0
Ethylbenzene	100-41-4	0.1 - 1.0
1,2,4-Trimethylbenzene	95-63-6	5.0 - 10.0

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING

Combustible. Irritating to eyes and skin.

Keep away from heat. Keep away from sources of ignition - No smoking. Keep container tightly closed. Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Use with adequate ventilation. Do not take internally. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water.

Wear suitable protective clothing, gloves and eye/face protection.

Combustible Liquid; may form combustible mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin, Inhalation

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC6509A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Can cause mild irritation.

SKIN CONTACT :

Can cause moderate irritation.

INGESTION :

Not a likely route of exposure. May cause nausea and vomiting. Can cause chemical pneumonia if aspirated into lungs following ingestion. Can cause central nervous system depression.

INHALATION :

Repeated or prolonged exposure may irritate the respiratory tract.

SYMPTOMS OF EXPOSURE :

Acute :

Inhalation of high concentrations of organic solvents can cause nausea, dizziness, vomiting, stupor or unconsciousness.

Chronic :

Frequent or prolonged contact with product may defat and dry the skin, leading to discomfort and dermatitis.

AGGRAVATION OF EXISTING CONDITIONS :

Skin contact may aggravate an existing dermatitis condition.

HUMAN HEALTH HAZARDS - CHRONIC :

This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans). This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

4. FIRST AID MEASURES

EYE CONTACT :

Immediately flush eye with water for at least 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT :

Immediately wash with plenty of soap and water. If symptoms develop, seek medical advice.

INGESTION :

Do not induce vomiting; contains petroleum distillates and/or aromatic solvents. If conscious, washout mouth and give water to drink. Get medical attention.

INHALATION :

Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

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MATERIAL SAFETY DATA SHEET

PRODUCT

EC6509A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

5. FIRE FIGHTING MEASURES

FLASH POINT : 156 °F / 68.9 °C

EXTINGUISHING MEDIA :

Carbon dioxide, Foam, Dry powder, Other extinguishing agent suitable for Class B fires, For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers.

UNSUITABLE EXTINGUISHING MEDIA :

Do not use water unless flooding amounts are available.

FIRE AND EXPLOSION HAZARD :

Combustible Liquid; may form combustible mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Remove sources of ignition. Stop or reduce any leaks if it is safe to do so. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Prevent material from entering sewers or waterways.

7. HANDLING AND STORAGE

HANDLING :

Use with adequate ventilation. Keep the containers closed when not in use. Do not use in locations where vapor is likely to travel to welding flames or arcs or to other hot surfaces. Vapors are much heavier than air, this can result in uneven distribution. Do not take internally. Do not breathe vapors/gases/dust. Do not get in eyes, on skin, on clothing. Have emergency equipment (for fires, spills, leaks, etc.) readily available.



MATERIAL SAFETY DATA SHEET

PRODUCT

EC6509A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

STORAGE CONDITIONS :

Store away from heat and sources of ignition. Store separately from oxidizers. Store the containers tightly closed. Use proper grounding procedures. Have appropriate fire extinguishers available in and near the storage area.

SUITABLE CONSTRUCTION MATERIAL :

Copper, Hastelloy C-276, Kalrez, Brass, Teflon, HDPE (high density polyethylene), Viton, Aluminum, Mild steel, Stainless Steel 304, Stainless Steel 316L

UNSUITABLE CONSTRUCTION MATERIAL :

PVC, EPDM, Alfax, Buna-N, Polyurethane, Hypalon, Neoprene, Ethylene propylene, Polypropylene, Polyethylene, Plexiglass

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

ACGIH/TLV :

Substance(s)

Oil Mist	TWA: 5 mg/m ³
Xylene	TWA: 100 ppm , 434 mg/m ³ STEL: 150 ppm , 651 mg/m ³
Naphthalene	TWA: 10 ppm , 52 mg/m ³ STEL: 15 ppm , 79 mg/m ³
Ethylbenzene	TWA: 100 ppm , 434 mg/m ³ STEL: 125 ppm , 543 mg/m ³
1,2,4-Trimethylbenzene	TWA: 25 ppm , 123 mg/m ³
Heavy Aromatic Naphtha Xylene	TWA: 100 ppm , 434 mg/m ³ STEL: 150 ppm , 651 mg/m ³
Naphthalene	TWA: 10 ppm , 52 mg/m ³ STEL: 15 ppm , 79 mg/m ³
1,2,4-Trimethylbenzene	TWA: 25 ppm , 123 mg/m ³

OSHA/PEL :

Substance(s)

Oil Mist	TWA: 5 mg/m ³
Xylene	TWA: 100 ppm , 435 mg/m ³ STEL: 150 ppm , 655 mg/m ³
Naphthalene	TWA: 10 ppm , 50 mg/m ³

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	STEL: 15 ppm , 75 mg/m3
Ethylbenzene	TWA: 100 ppm , 435 mg/m3 STEL: 125 ppm , 545 mg/m3
1,2,4-Trimethylbenzene	TWA: 25 ppm , 125 mg/m3
Heavy Aromatic Naphtha Xylene	TWA: 100 ppm , 435 mg/m3 STEL: 150 ppm , 655 mg/m3
Naphthalene	TWA: 10 ppm , 50 mg/m3 STEL: 15 ppm , 75 mg/m3
1,2,4-Trimethylbenzene	TWA: 25 ppm , 125 mg/m3

Manufacturer's Recommendation :

Substance(s)

Heavy Aromatic Naphtha TWA: 100 mg/m3

ENGINEERING MEASURES :

Use general ventilation with local exhaust ventilation.

RESPIRATORY PROTECTION :

If significant mists, vapors or aerosols are generated an approved respirator is recommended. An organic vapor cartridge with dust/mist prefilter or supplied air may be used. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :

Nitrile gloves, Viton# gloves, Polyvinyl alcohol gloves

SKIN PROTECTION :

Wear impervious apron and boots.

EYE PROTECTION :

Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :

Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE Liquid

APPEARANCE Amber

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ODOR	Hydrocarbon
SPECIFIC GRAVITY	0.9 @ 60 °F / 15.6 °C
DENSITY	7.48 lb/gal
SOLUBILITY IN WATER	Insoluble
INITIAL BOILING POINT	348 °F / 175.6 °C
VAPOR PRESSURE	0.5 mm Hg @ 100 °F / 37.8 °C

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :

Stable under normal conditions.

HAZARDOUS POLYMERIZATION :

Hazardous polymerization will not occur.

CONDITIONS TO AVOID :

Heat and sources of ignition including static discharges.

MATERIALS TO AVOID :

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS :

Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

This product contains ethylbenzene. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans). This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High

MATERIAL SAFETY DATA SHEET

PRODUCT

EC6509A

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTRAC

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

No toxicity studies have been conducted on this product.

MOBILITY :

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages:

Air	10 - 30%	Water	30 - 50%	Soil/Sediment	10 - 30%
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The portion in water is expected to float on the surface.

BIOACCUMULATION POTENTIAL

Component substances have a potential to bioconcentrate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste: D001, D018

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

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**MATERIAL SAFETY DATA SHEET****PRODUCT****EC6509A****EMERGENCY TELEPHONE NUMBER(S)****(800) 424-9300 (24 Hours) CHEMTREC****LAND TRANSPORT :**

For Packages Less Than Or Equal To 119 Gallons:

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING
TRANSPORTATION

For Packages Greater Than 119 Gallons:

Proper Shipping Name :

COMBUSTIBLE LIQUID, N.O.S.

Technical Name(s) :

AROMATIC HYDROCARBONS, NAPHTHALENE

UN/ID No :

NA 1993

Hazard Class - Primary :

COMBUSTIBLE

Packing Group :

III

Flash Point :

68.9 °C / 156 °F

DOT Reportable Quantity (per package) :

1,200 lbs

DOT RQ Component :

NAPHTHALENE

AIR TRANSPORT (ICAO/IATA) :

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.

Technical Name(s) :

NAPHTHALENE

UN/ID No :

UN 3082

Hazard Class - Primary :

9

Packing Group :

III

IATA Cargo Packing Instructions :

914

IATA Cargo Aircraft Limit :

NO LIMIT (Max net quantity per package)

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :

PRODUCT IS NOT REGULATED DURING
TRANSPORTATION**15. REGULATORY INFORMATION****NATIONAL REGULATIONS, USA :**

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :

Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Heavy Aromatic Naphtha : Combustible., Irritant

Xylene : Flammable, Irritant

Naphthalene : Skin irritant, Combustible., Cancer suspect agent (refer to Section 3)

Ethylbenzene : Flammable, Irritant, Cancer suspect agent (refer to Section 3)

1,2,4-Trimethylbenzene : Irritant, Combustible.

CERCLA/SUPERFUND, 40 CFR 117, 302 :

This product contains the following Reportable Quantity (RQ) Substance. Also listed is the RQ for the product.

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RQ Substance
Naphthalene

RQ
1,200 lbs

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :

This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

- X Immediate (Acute) Health Hazard
- X Delayed (Chronic) Health Hazard
- X Fire Hazard
- Sudden Release of Pressure Hazard
- Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :

This product contains the following substance(s), (with CAS # and % range) which appear(s) on the List of Toxic Chemicals

Hazardous Substance(s)	CAS NO	% (w/w)
Xylene	1330-20-7	1.0 - 5.0
Naphthalene	91-20-3	5.0 - 10.0
Ethylbenzene	100-41-4	0.1 - 1.0
1,2,4-Trimethylbenzene	95-63-6	5.0 - 10.0

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR / formerly Sec. 311 :

This product contains the following substances listed in the regulation:

Substance(s)	Citations
• Xylene	Sec. 311
• Naphthalene	Sec. 307, Sec. 311
• Ethylbenzene	Sec. 307, Sec. 311

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CLEAN AIR ACT, Sec. 111 (40 CFR 60, Volatile Organic Compounds), Sec. 112 (40 CFR 61, Hazardous Air Pollutants), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :

This product contains the following substances listed in the regulation:

Substance(s)	Citations
<ul style="list-style-type: none">XyleneEthylbenzene	Sec. 111, Sec. 112
<ul style="list-style-type: none">Naphthalene	Sec. 112

CALIFORNIA PROPOSITION 65 :

This product contains the following substances which require warning under California Proposition 65.

Substance(s)	Concentration	EFFECTS
<ul style="list-style-type: none">Naphthalene	10 %	Causes Cancer
<ul style="list-style-type: none">Ethylbenzene	1 %	

MICHIGAN CRITICAL MATERIALS :

This product contains the following substances listed in the regulation:

Xylene
Naphthalene

STATE RIGHT TO KNOW LAWS :

The following substances are disclosed for compliance with State Right to Know Laws:

Xylene 1330-20-7
Naphthalene 91-20-3
Ethylbenzene 100-41-4
Trimethylbenzene - 25551-13-7, 67952-31-2

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :

B3 - Combustible Liquids, D2B - Materials Causing Other Toxic Effects - Toxic Material, D2A - Materials Causing Other Toxic Effects - Very Toxic Material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

This product contains substance(s) which are found on the Non-Domestic Substances List (NDSL), or are not in compliance with the Canadian Environmental Protection Act (CEPA) and may require additional review.

INTERNATIONAL CHEMICAL CONTROL LAWS

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MATERIAL SAFETY DATA SHEET

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EUROPE

The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

KOREA

All substances in this product comply with the Toxic Chemical Control Law (TCLL) and are listed on the Existing Chemicals List (ECL)

16. OTHER INFORMATION

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, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH, (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight# (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight# CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS# CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department

Date issued : 05/20/2003

Replaces : 01/02/2002

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MATERIAL SAFETY DATA SHEET

Product Trade Name: EZ-MUD® DP

Revision Date: 04-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: EZ-MUD® DP
Synonyms: None
Chemical Family: Polymer
Application: Shale Inhibitor
Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000
Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Polyacrylamide / polyacrylate copolymer		90-95	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye and skin irritation. Airborne dust may be explosive.

4. FIRST AID MEASURES

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Skin Wash with soap and water. Get medical attention if irritation persists.
Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Notes to Physician Not Applicable

Engineering Controls
Use in a well ventilated area.

Personal Protective Equipment
If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection
Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (95%)
Normal work gloves.
Normal work coveralls.
Eye Protection
Wear safety glasses or goggles to protect against exposure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Handling Precautions
Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Slippery when wet.

Storage Information
Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 36 months.

7. HANDLING AND STORAGE

Environmental Precautionary Measures
Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption
Scoop up and remove.

Personal Precautionary Measures
Use appropriate protective equipment. Avoid creating and breathing dust. Slippery when wet.

6. ACCIDENTAL RELEASE MEASURES

Special Protective Equipment for Fire-Fighters
Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Special Exposure Hazards
Decomposition in fire may produce toxic gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

Fire Extinguishing Media
Water fog, carbon dioxide, foam, dry chemical.

NFPA Ratings:
Health 1, Flammability 0, Reactivity 0

HMS Ratings:
Health 1, Flammability 0, Physical Hazard 0, PPE: B

Flash Point/Range (F):
Not Determined

Flash Point/Range (C):
Not Determined

Flash Point Method:
Not Determined

Autoignition Temperature (F):
Not Determined

Autoignition Temperature (C):
Not Determined

Flammability Limits in Air - Lower (%):
Not Determined

Flammability Limits in Air - Upper (%):
Not Determined

5. FIRE FIGHTING MEASURES

Other Precautions

None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	White
Odor:	Mild
pH:	6-8
Specific Gravity @ 20 C (Water=1):	0.8
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	40
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	None known.
Skin Contact	May cause mild skin irritation.
Eye Contact	May cause mild eye irritation.
Ingestion	None known
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.

Other Information None known.

Toxicity Tests

Oral Toxicity: LD50: > 5000 mg/kg (Rat)
Dermal Toxicity: Not determined
Inhalation Toxicity: Not determined
Primary Irritation Effect: Not determined
Carcinogenicity: Not determined
Genotoxicity: Not determined
Reproductive / Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined
Persistence/Degradability BOD(28 Day): 3% of COD
Bio-accumulation Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: TLM48: 2202 mg/l (Acartia tonsa)
Acute Algae Toxicity: EC50: 4310 mg/l (Skeletonema costatum)

Chemical Fate Information Not determined
Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	None
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	Un-Controlled

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative.
	For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

Draft

MATERIAL SAFETY DATA SHEET

Product Trade Name: EZ MUL® NT

Revision Date: 05-Jan-2009

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: EZ MUL® NT
 Synonyms: None
 Chemical Family: Blend
 Application: Emulsifier

Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	200 mg/m ³	Not applicable
Ethylene glycol monobutyl ether	111-76-2	1 - 5%	20 ppm	50 ppm
Diethylene glycol monobutyl ether	112-34-5	1 - 5%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Combustible.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.

Eyes: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion
 Notes to
 5. FIRE
 Flash Po
 Flash Po
 Flash Po
 Autoigni
 Autoigni
 Flammab
 Flammab
 Fire Exti
 Special E
 Special E
 Fire-Figh
 NFPA Ra
 HMIS Ra
 6. AC
 Persona
 Environ
 Measure
 Procedu
 Absorpt
 7. HA
 Handling
 Storage
 8. EX
 Enginee
 Respira
 Hand Pr
 Skin Pro
 Eye Pro

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): 149
Flash Point/Range (C): 65
Flash Point Method: PMCC
Autoignition Temperature (F): Not Determined
Autoignition Temperature (C): Not Determined
Flammability Limits in Air - Lower (%): 0.6
Flammability Limits in Air - Upper (%): 4.7

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 2, Reactivity 0

HMS Ratings: Health 2, Flammability 2, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Organic vapor respirator with a dust/mist filter. In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Dark amber
Odor:	Mild hydrocarbon
pH:	4-7
Specific Gravity @ 20 C (Water=1):	0.96
Density @ 20 C (lbs./gallon):	8.0
Bulk Density @ 20 C (lbs/ft ³):	Not Determined
Boiling Point/Range (F):	304
Boiling Point/Range (C):	150
Freezing Point/Range (F):	-4
Freezing Point/Range (C):	-20
Vapor Pressure @ 20 C (mmHg):	0.2
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	35
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of nitrogen. Hydrocarbons. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation.
Eye Contact	May cause severe eye irritation.

Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Aggravated Medical Conditions	Lung disorders.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	BOD(28 Day): < 60% of COD
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	EC50: 1701 mg/l (Corophium volutator)
Acute Crustaceans Toxicity:	TLM48: 199.4 mg/l (Acartia tonsa)
Acute Algae Toxicity:	Not determined

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT Not restricted

DOT (Bulk)
Combustible Liquid, N.O.S., Combustible Liquid, NA1993, III
(Contains Petroleum Distillates)

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard
Fire Hazard

EPA SARA (313) Chemicals This product contains toxic chemical(s) listed below which is(are) subject to the reporting requirements of Section 313 of Title III of SARA and 40 CFR Part 372:
Glycol Ethers//111-76-2
Glycol Ethers//112-34-5

EPA CERCLA/Superfund Reportable Spill Quantity Not applicable.

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65 All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class

B3 Combustible Liquids
D1A Very Toxic Materials
D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

MATERIAL SAFETY DATA SHEET

Product Trade Name: **FACTANT**

Revision Date: 29-Jun-2009

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: FACTANT
 Synonyms: None
 Chemical Family: Blend
 Application: Emulsifier
 Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000
 Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	1 - 5%	200 mg/m ³	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin Wash with soap and water. Get medical attention if irritation persists.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	> 220
Flash Point/Range (C):	Not Determined
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	> 220
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Carbon Dioxide, Dry Chemicals, Foam.

Special Exposure Hazards Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 1, Flammability 1, Reactivity 0
HMS Ratings: Health 1, Flammability 1, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 6 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear amber
Odor:	Mild Hydrocarbon
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	0.96
Density @ 20 C (lbs./gallon):	8.0
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	-4 - -5
Vapor Pressure @ 20 C (mmHg):	< 0.2
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	10
Evaporation Rate (Butyl Acetate=1):	< 0.01
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin defatting with prolonged exposure. May cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach. Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Aggravated Medical Conditions	None known.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Other Information None known.

Toxicity Tests

Oral Toxicity: Not determined

Dermal Toxicity: Not determined

Inhalation Toxicity: Not determined

Primary Irritation Effect: Not determined

Carcinogenicity Not determined

Genotoxicity: Not determined

Reproductive /
Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined

Persistence/Degradability Not determined

Bio-accumulation Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined

Acute Crustaceans Toxicity: Not determined

Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	Product contains one or more components not listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

Draft

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **GELTONE® V**

Revision Date: 04-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: GELTONE® V
 Synonyms: None
 Chemical Family: Blend
 Application: Viscosifier

Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Modified bentonite		60 - 100%	Not applicable	Not applicable
Isopropanol	67-63-0	1 - 5%	200 ppm	400 ppm
Crystalline silica, quartz	14808-60-7	2-6	0.025 mg/m ³	10 mg/m ³ %SiO ₂ + 2
Crystalline silica, cristobalite	14464-46-1	0 - 1%	0.025 mg/m ³	1/2 x 10 mg/m ³ %SiO ₂ + 2
Crystalline silica, tridymite	15468-32-3	0 - 1%	0.05 mg/m ³	1/2 x 10 mg/m ³ %SiO ₂ + 2

More restrictive exposure limits may be enforced by some states, agencies, or other authorities.

3. HAZARDS IDENTIFICATION

Hazard Overview

CAUTION! - ACUTE HEALTH HAZARD

May cause eye, skin, and respiratory irritation.

DANGER! - CHRONIC HEALTH HAZARD

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion

Under normal conditions, first aid procedures are not required.

Notes to Physician

Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):

Not Determined

Flash Point/Range (C):

Not Determined

Flash Point Method:

Not Determined

Autoignition Temperature (F):

Not Determined

Autoignition Temperature (C):

Not Determined

Flammability Limits in Air - Lower (%):

Not Determined

Flammability Limits in Air - Upper (%):

Not Determined

Fire Extinguishing Media

All standard firefighting media.

Special Exposure Hazards

Not applicable.

Special Protective Equipment for Fire-Fighters

Not applicable.

NFPA Ratings:

Health 1, Flammability 0, Reactivity 0

HMIS Ratings:

Health 1*, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures None known.

Procedure for Cleaning / Absorption

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. HANDLING AND STORAGE

Handling Precautions

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Storage Information

Store in a cool, dry location. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 24 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

Respiratory Protection

Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.

Hand Protection

Normal work gloves.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

Other Precautions

None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Powder
Color:	Tan
Odor:	Mild
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	1.6
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	35- 57
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Miscible in hydrocarbons
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined

PHYSICAL AND CHEMICAL PROPERTIES

Molecular Weight (g/mole): Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Hydrofluoric acid.
Hazardous Decomposition Products	Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	<p>Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).</p> <p>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).</p>
Skin Contact	May cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach.
Aggravated Medical Conditions	Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust.

Chronic Effects/Carcinogenicity

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

Other Information

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

Toxicity Tests

Oral Toxicity:	LD50: > 5000 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Refer to <u>IARC Monograph 68, Silica, Some Silicates and Organic Fibres</u> (June 1997).
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined

Chem
Other
13.
Dispo
Conta
14.
Land
DOT
Not re
Canad
Not re
ADR
Not re
Air T
ICAO/
Not re
Sea T
IMDG
Not re
Other
Labels
15. I
US R
US TS
EPA S
Hazard
EPA S
Class
EPA S
EPA C
Report

Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard
Chronic Health Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity Not applicable.

EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	The California Proposition 65 regulations apply to this product.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.
Canadian Regulations	
Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2A Very Toxic Materials Crystalline silica

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

Pro
Revis
1.
Prod
Syno
Chem
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Prepa
2. C
SUBS
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3. H
Hazard
4. FI
Inhalat
Skin
Eyes
Ingestio
Notes to

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **LIME , HYDRATED**

Revision Date: 04-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: LIME , HYDRATED
Synonyms: None
Chemical Family: Inorganic
Application: Component
Manufacturer/Supplier: Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000
Prepared By: Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Calcium hydroxide	1305-62-0	60 - 100%	5 mg/m ³	15 mg/m ³

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye and skin burns. May cause respiratory irritation. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin: Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

Eyes: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media All standard firefighting media.

Special Exposure Hazards Not applicable.

Special Protective Equipment for Fire-Fighters Not applicable.

NFPA Ratings: Health 1, Flammability 0, Reactivity 0

HMIS Ratings: Health 1, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures None known.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

Storage Information Store away from acids. Store in a cool, dry location.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Dust/mist respirator. (95%)

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Dust proof goggles.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	White
Odor:	Odorless
pH:	12.2
Specific Gravity @ 20 C (Water=1):	2.24
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	75

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	0.2
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	74.1

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong acids.
Hazardous Decomposition Products	None known.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation.
Skin Contact	Causes severe skin irritation. May cause skin burns on prolonged contact.
Eye Contact	Causes severe eye irritation May cause eye burns.
Ingestion	Irritation of the mouth, throat, and stomach.
Aggravated Medical Conditions	Skin disorders.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: 7340 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined

Genotoxicity: Not determined

Reproductive /
Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined

Persistence/Degradability Not determined

Bio-accumulation Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined

Acute Crustaceans Toxicity: Not determined

Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

MATERIAL SAFETY DATA SHEET

Product Trade Name: **INVERMUL® NT**

Revision Date: 05-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: INVERMUL® NT
 Synonyms: None
 Chemical Family: Blend
 Application: Emulsifier
 Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000
 Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	200 mg/m ³	Not applicable
Ethylene glycol monobutyl ether	111-76-2	1 - 5%	20 ppm	50 ppm
Diethylene glycol monobutyl ether	112-34-5	1 - 5%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Combustible.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.
Skin: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention.
Eyes: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F): 156
Flash Point/Range (C): 69
Flash Point Method: PMCC
Autoignition Temperature (F): Not Determined
Autoignition Temperature (C): Not Determined
Flammability Limits in Air - Lower (%): 0.6
Flammability Limits in Air - Upper (%): 4.7

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 2, Reactivity 0
HMIS Ratings: Health 2, Flammability 2, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Remove ignition sources and work with non-sparking tools. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Organic vapor respirator with a dust/mist filter. In high concentrations, supplied air respirator or a self-contained breathing apparatus.

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Black
Odor:	Mild hydrocarbon
pH:	4-7
Specific Gravity @ 20 C (Water=1):	0.92-0.95
Density @ 20 C (lbs./gallon):	7.8
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	390
Boiling Point/Range (C):	199 .
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	430
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	> 3
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Oxides of nitrogen. Hydrocarbons. Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin irritation.
Eye Contact	May cause severe eye irritation.

Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal. May cause central nervous system depression including headache, dizziness, drowsiness, muscular weakness, incoordination, slowed reaction time, fatigue blurred vision, slurred speech, giddiness, tremors and convulsions.
Aggravated Medical Conditions	Lung disorders.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	BOD(28 Day): < 60% of COD
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	EC50: 1785 mg/l (Corophium volutator)
Acute Crustaceans Toxicity:	TLM48: 33.9 mg/l (Acartia tonsa)
Acute Algae Toxicity:	EC50: 8.4 mg/l (Skeletonema costatum)

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

DOT (Bulk)
Combustible Liquid, N.O.S., Combustible Liquid, NA1993, III
(Contains Petroleum Distillates)

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard
Fire Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity Not applicable.

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65 All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class

B3 Combustible Liquids
D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

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END OF MSDS



SAFETY DATA SHEET

O-3670R

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

PRODUCT NAME: O-3670R

APPLICATIONS: CORROSION INHIBITOR BIOCIDE OXYGEN SCAVENGER

SUPPLIER: CHAMPION TECHNOLOGIES
Minto Avenue
Alens Ind. Est.
Aberdeen AB12 3JZ
Fax: (01224) 876022

EMERGENCY TELEPHONES: [24Hr] 00 44 (0)1224 879022
OUT OF OFFICE HOURS ASK FOR HEALTH AND SAFETY

2. COMPOSITION/INFORMATION ON INGREDIENTS

NAME	CAS No.:	CONTENT	SYMBOL:	RISK:
AMMONIUM BISULPHITE	10192-30-0	10-30 %	Xi	R-31, 36/37/38
QUATERNARY AMMONIUM COMPOUNDS	63449-41-2	10-30 %	C	R-21/22, 34

3. HAZARDS IDENTIFICATION

Causes burns. Irritating to respiratory system.

4. FIRST AID MEASURES

GENERAL: First Aid treatments follow the principles of UK HSE "First Aid at Work" training

INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. When breathing is difficult, properly trained personnel may assist affected person by administering 100% oxygen. Get medical attention.

INGESTION: DO NOT INDUCE VOMITING! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. Rinse mouth thoroughly. Drink plenty of water. Get medical attention immediately!

SKIN: Remove affected person from source of contamination. Rinse the skin immediately with lots of water. Continue to rinse for at least 15 minutes and seek medical attention.

EYES: Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

5 FIRE FIGHTING MEASURES:

- EXTINGUISHING MEDIA:** Water spray. Carbon dioxide (CO2). Dry chemicals, sand, dolomite etc.
- SPECIAL FIRE FIGHTING PROCEDURES:** Avoid water in straight hose stream; will scatter and spread fire.
- PROTECTIVE MEASURES IN FIRE:** Wear self contained breathing apparatus Cool containers with water spray if safe to do so.

6 ACCIDENTAL RELEASE MEASURES:

- PERSONAL PRECAUTION IN SPILL:** Wear personal protective equipment.
- PRECAUTIONS TO PROTECT ENVIRONMENT:** Do not let product enter drains or water courses. Do not flush undiluted product into surface water or sanitary sewer systems.
- SPILL CLEANUP METHODS:** Stop leak if possible without risk. DO NOT touch spilled material! If possible neutralise with dilute acid. Absorb onto suitable material and place in plastic containers for subsequent disposal. Flush area with plenty of water. Do not let washing down water contaminate ponds or waterways.

7 HANDLING AND STORAGE

- USAGE PRECAUTIONS:** Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level.
- STORAGE PRECAUTIONS:** Store away from; Acids. Alkalies. Oxidising material.
- STORAGE CRITERIA:** Corrosive storage.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENT NAME:	CAS No.:	STD	LT EXP 8 Hrs	ST EXP 15 Min
AMMONIUM BISULPHITE	10192-30-0		No std.	No std.
INGREDIENT COMMENTS:	OES = Occupational Exposure Standard.			
PROTECTIVE EQUIPMENT:				



- RESPIRATORS:** Respirator with combination filter for vapour/ particulate, acidic substances
- PROTECTIVE GLOVES:** Use full length gloves.
- EYE PROTECTION:** Wear full face visor or shield.
- OTHER PROTECTION:** Wear appropriate clothing to prevent any possibility of skin contact.

HYGIENIC WORK PRACTICES: DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes contaminated. No eating or drinking while working with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Liquid.

COLOUR: Colourless. Light yellow.

DENSITY/SPECIFIC GRAVITY (g/ml): 1.05 - 1.06 **Temperature (°C):** 20

pH-VALUE, CONC. SOLUTION: 5.27

FLASH POINT (°C): > 65 **Method:** CC (Closed cup).

10. STABILITY AND REACTIVITY

STABILITY: Normally stable.

CONDITIONS TO AVOID: Heating in air

MATERIALS TO AVOID: Strong acids. Oxidising agents

HAZARDOUS DECOMP. PRODUCTS: Carbon monoxide (CO).

11. TOXICOLOGICAL INFORMATION

INHALATION: Irritating to respiratory system.

INGESTION: May cause burns in mucous membranes, throat, oesophagus and stomach.

SKIN: Causes burns.

EYES: Causes burns.

12. ECOLOGICAL INFORMATION

WATER HAZARD CLASSIFICATION: OCNS CATEGORY B

13. DISPOSAL CONSIDERATIONS

GENERAL/CLEANING: empty containers should be taken for local recycling, recovery or waste disposal

DISPOSAL METHODS: Dispose of in accordance with Local Authority requirements. Do not allow runoff to sewer, waterway or ground.

WASTE CLASS: Dispose of as Special Waste.

14. TRANSPORT INFORMATION**LABEL FOR CONVEYANCE:**

UN No. ROAD:	3265
ADR CLASS No.:	8
ADR CLASS:	Class 8: Corrosive substances.
ADR ITEM No.:	40(c)
ADR LABEL No.:	8
PROPER SHIPPING NAME I:	CORROSIVE LIQUID, ACIDIC, ORGANIC, NOS [QUATERNARY AMMONIUM CHLORIDE]
PROPER SHIPPING NAME II:	CORROSIVE LIQUID, ACIDIC, ORGANIC, NOS [QUATERNARY AMMONIUM CHLORIDE]
RID CLASS No.:	8
RID ITEM No.:	40(b)
UN No. SEA:	3265
IMDG CLASS:	8
IMDG PAGE No.:	8147-1
IMDG PACK GR.:	III
UN No., AIR:	3265
ICAO CLASS:	8
AIR PACK GR.:	III
AIR TRANSPORT NOTES:	PACKING INSTRUCTION (PASSENGER) 818 - 5 LITRES PACKING INSTRUCTION (CARGO) 820 - 60 LITRES

15. REGULATORY INFORMATION**LABEL FOR SUPPLY:**

RISK PHRASES:	R-34 Causes burns. R-37 Irritating to respiratory system.
----------------------	--

SAFETY PHRASES: S-23 Do not breathe gas/fumes/vapour/spray.
S-24/25 Avoid contact with skin and eyes.
S-26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S-45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S-36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

ENVIRONMENTAL LISTING: Control of Pollution (Special Waste Regulations) Act 1980.

STATUTORY INSTRUMENTS: Chemicals (Hazard Information and Packaging) Regulations. Control of Substances Hazardous to Health.

16 OTHER INFORMATION

ISSUED BY: SH

REVISION DATE: 27/07/2001

REV. No./REPL. SDS GENERATED: 2

SDS No.: 273A

DATE: 27/07/01

DISCLAIMER: The information provided in this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

PRINTING DATE: 2001-07-27



SAFETY DATA SHEET

FLUORESCHEIN LIQUID DYE

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY:

PRODUCT NAME: FLUORESCHEIN LIQUID DYE

CHEMICAL NAME 2: XANTHENE DYE PREPARATION IN AQUEOUS SOLUTION

PART No.: 2019PPP

APPLICATIONS: INDUSTRIAL DYE

SUPPLIER: CHAMPION SERVO
Minto Avenue
Altens Ind Est
Aberdeen AB12 3JZ
Tel: 00 44 01224 879022
Fax: 00 44 01224 876022

EMERGENCY TELEPHONES: OUT OF OFFICE HOURS ASK FOR HEALTH AND SAFETY

2. COMPOSITION/INFORMATION ON INGREDIENTS:

NAME	EINECS Nr.:	CLASSIFICATION	CONTENT
CAS No.: CI ACID YELLOW (SOLID) 518-47-8		Xi R-36/38	30-60 %

The Full Text for all R-Phrases are Displayed in Section 16

3. HAZARDS IDENTIFICATION:

Irritating to eyes and skin.

4. FIRST AID MEASURES:

INHALATION: Provide rest, warmth and fresh air. Get medical attention if any discomfort continues.

INGESTION: Rinse nose, mouth and throat with water. Drink plenty of water. Get medical attention.

SKIN: Wash skin thoroughly with soap and water. Immediately remove contaminated clothing. Get medical attention if irritation persists after washing.

EYES: Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. To hospital or eye specialist.

5. FIRE FIGHTING MEASURES:

EXTINGUISHING MEDIA: Carbon dioxide (CO₂). Foam. Water spray.

SPECIAL FIRE FIGHTING PROCEDURES: No specific fire fighting procedure given.

UNUSUAL FIRE & EXPLOSION HAZARDS: No unusual fire or explosion hazards noted.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of: Sulphur. Nitrogen. Carbon.

PROTECTIVE MEASURES IN FIRE: Wear self contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES:

PERSONAL PRECAUTION IN SPILL: Wear personal protective equipment. Eyewash facilities. Emergency shower.

PRECAUTIONS TO PROTECT ENVIRONMENT: Do not let product enter drains or water courses. Do not flush undiluted product into surface water or sanitary sewer systems. Dyestuffs can stain heavily.

SPILL CLEANUP METHODS: Dye can be neutralised out by the addition of sodium hypochlorite (bleach), ideally at a strength of less than 5% and flushed to foul drainage. Larger spill: Wash down area with dilute bleach.

7. HANDLING AND STORAGE:

STORAGE PRECAUTIONS: Keep in cool, dry, ventilated storage and closed containers.

STORAGE CRITERIA: Store in containers made of: HDPE Plastic, Stainless Steel,

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION:

PROTECTIVE EQUIPMENT:



RESPIRATORS: Respiratory protection not required.

PROTECTIVE GLOVES: Rubber or plastic.

EYE PROTECTION:	Use approved safety goggles or face shield.
OTHER PROTECTION:	Wear appropriate clothing to prevent any possibility of skin contact.
HYGIENIC WORK PRACTICES:	No eating or drinking while working with this material. DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE:	Liquid.		
COLOUR:	Dark. Greenish. Yellow.		
BOILING POINT (°C, Interval):	~ 100 - 102	Pressure:	
DENSITY/SPECIFIC GRAVITY (g/ml):	~ 1.20 - 1.21	Temperature (°C):	20
pH-VALUE, CONC. SOLUTION:	9-10		
SOLUBILITY DESCRIPTION:	Completely miscible with water		

10. STABILITY AND REACTIVITY:

CONDITIONS TO AVOID:	Avoid contact with acids.
HAZARDOUS DECOMP. PRODUCTS:	Oxides of: Sulphur. Nitrogen. Carbon.

11. TOXICOLOGICAL INFORMATION:

INHALATION:	No specific health warnings noted.
INGESTION:	May cause stomach pain or vomiting.
SKIN:	Irritating to skin. Contact with this product will cause skin discolouration.
EYES:	Irritating to eyes.

12. ECOLOGICAL INFORMATION:

ECOLOGICAL INFORMATION:	Little danger to the environment. Is a powerful dye and has a significant visual effect in water. OCNS Category D
--------------------------------	---

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHODS: Dispose of in accordance with Local Authority requirements.

14. TRANSPORT INFORMATION:

GENERAL: Not classified under UN Transport Regulations for any mode of transport

15. REGULATORY INFORMATION:

LABEL FOR SUPPLY:



RISK PHRASES: R-36/38 Irritating to eyes and skin.

SAFETY PHRASES: S-60 This material and its container must be disposed of as hazardous waste.

UK REGULATORY REFERENCES: Approved Supply List.

STATUTORY INSTRUMENTS: Chemicals (Hazard Information and Packaging) Regulations.

APPROVED CODE OF PRACTICE: Safety Data Sheets for Substances and Preparations L62.

GUIDANCE NOTES: Approved guide to the classification and labelling of substances and preparations dangerous for supply.

16. OTHER INFORMATION:

REVISION COMMENTS: General revision.

REVISION DATE: 27/03/02

REV. No./REPL. SDS GENERATED: 14/06/01

SIGNATURE: T Howe

DISCLAIMER: The information provided in this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

PRINTING DATE: 2002-06-14

R-PHRASES (Full Text): R-36/38 Irritating to eyes and skin.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **PAC™-LE**

Revision Date: 05-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: PAC™-LE
Synonyms: None
Chemical Family: Carbohydrate
Application: Fluid Loss Additive

Manufacturer/Supplier: Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Cellulose derivative		60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation. Airborne dust may be explosive.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin: Wash with soap and water. Get medical attention if irritation persists.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion: Under normal conditions, first aid procedures are not required.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	430
Flash Point/Range (C):	221
Flash Point Method:	Not Determined
Autoignition Temperature (F):	752
Autoignition Temperature (C):	400
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 0, Flammability 0, Reactivity 0
HMIS Ratings: Health 0, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Avoid creating and breathing dust.

Environmental Precautionary Measures None known.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid creating or inhaling dust. Avoid dust accumulations. Slippery when wet.

Storage Information Store away from oxidizers. Store in a dry location. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls A well ventilated area to control dust levels. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (95%)

Hand Protection Normal work gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	White to off white
Odor:	Odorless
pH:	6.5-9 (1%)
Specific Gravity @ 20 C (Water=1):	1.6
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	40-55
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Forms gel
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause mild respiratory irritation.
Skin Contact	May cause mild skin irritation.
Eye Contact	May cause mild eye irritation.
Ingestion	None known
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: 1260 mg/kg (Rat)

Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Readily biodegradable
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	TLM96: > 500 mg/l (Golden orfe)
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR
Not restricted

Air Transportation

ICAO/IATA
Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	None
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	Un-Controlled

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

Draft

**MATERIAL SAFETY DATA SHEET**

PRODUCT

PX0191**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT NAME PX0191
APPLICATION EMULSION BREAKER
Date issued : 21-Sep-05

COMPANY IDENTIFICATION

CHINA:	NALCO INDUSTRIAL SERVICES (SUZHOU) CO LTD	TEL.:86-512-68255001	FAX: 86-512-68250130
INDIA:	NALCO INDIA LIMITED	TEL: 91-33-22172066	FAX: 91-33-22296858
INDONESIA:	PT NALCO INDONESIA	TEL: 62-21-8753175	FAX: 62-21-8753167
KOREA:	NALCO KOREA LIMITED	TEL: 82-2-789-6961	FAX: 82-2-786-3140
MALAYSIA:	NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD	TEL: 603-5569 4118	FAX: 603-5569 5955
THE PHILIPPINES:	NALCO PHILIPPINES INC	TEL: 63-49-5451550	FAX: 63-49-5453442
SINGAPORE:	NALCO PACIFIC PTE LTD	TEL: 65-6861-4011	FAX: 65-6862 0850
THAILAND:	NALCO INDUSTRIAL SERVICES (THAILAND) CO LTD	TEL: 66-38-955-160	FAX: 66-38-955-166

See Section 16 for address information.

EMERGENCY TELEPHONE NUMBER(S) : See section 16, for Emergency Telephone Numbers.**2. COMPOSITION/INFORMATION ON INGREDIENTS**

CHEMICAL DESCRIPTION : Resins, Hydrocarbon solvent

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

CHEMICAL NAME	CAS NO	% (w/w)
Naphthalene	91-20-3	5.0 - 10.0
1,2,4-Trimethylbenzene	95-63-6	1.0 - 5.0
Heavy Aromatic Naphtha	64742-94-5	30.0 - 60.0
Other ingredients determined not to be hazardous		to 100%

3. HAZARDS IDENTIFICATION**HUMAN HEALTH HAZARDS - ACUTE****EYE CONTACT**

Can cause mild irritation.

SKIN CONTACT

May cause irritation with prolonged contact. Frequent or prolonged contact with product may defat and dry the skin, leading to discomfort and dermatitis.

INGESTION

Not a likely route of exposure. Can cause chemical pneumonia if aspirated into lungs following ingestion. May cause nausea and vomiting. Can cause central nervous system depression.

INHALATION

Repeated or prolonged exposure may irritate the respiratory tract. Product mist or vapors may cause headache, nausea, vomiting, drowsiness, stupor or unconsciousness.

AGGRAVATION OF EXISTING CONDITIONS



MATERIAL SAFETY DATA SHEET

PRODUCT

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Skin contact may aggravate an existing dermatitis condition.

HUMAN HEALTH HAZARDS - CHRONIC

This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

ENVIRONMENTAL HAZARDS

Keep out of waterways. Spilled product may pose a risk to the aquatic ecosystem if released.

PHYSICAL AND CHEMICAL HAZARDS

Combustible.

4. FIRST AID MEASURES

EYE CONTACT

Get medical attention. Immediately flush eye with water for at least 15 minutes while holding eyelids open.

SKIN CONTACT

Remove contaminated clothing. Wash off affected area immediately with soap and plenty of water. If symptoms develop, seek medical advice.

INGESTION

Do not induce vomiting: contains petroleum distillates and/or aromatic solvents. If conscious, washout mouth and give water to drink. If reflexive vomiting occurs, rinse mouth and repeat administration of water. Get medical attention.

INHALATION

Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN

Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : 62 °C

EXTINGUISHING MEDIA

Foam, Carbon dioxide, Dry powder, other extinguishing agent suitable for Class B fires. For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers.

UNSUITABLE EXTINGUISHING MEDIA

Do not use water unless flooding amounts are available.

FIRE AND EXPLOSION HAZARD

Combustible Liquid; may release vapors that form flammable mixtures at or above the flash point. Empty product containers may contain product residue. Do not pressurize, cut, heat, weld, or expose containers to flame or other sources of ignition. May evolve oxides of carbon (COx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING

In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES



MATERIAL SAFETY DATA SHEET

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PERSONAL PRECAUTIONS

Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities. Remove sources of ignition.

METHODS FOR CLEANING UP

SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. **LARGE SPILLS:** Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS

Prevent material from entering sewers or waterways. Spilled product may pose a risk to the aquatic ecosystem if released. If drains, streams, soil or sewers become contaminated, notify local authority.

7. HANDLING AND STORAGE

HANDLING

Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Do not breathe vapors/gases/dust. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labelled. Do not use, store, spill or pour near heat, sparks or open flame.

STORAGE CONDITIONS

Store in suitable labelled containers. Store the containers tightly closed. Store away from heat and sources of ignition. Have appropriate fire extinguishers available in and near the storage area. Connections must be grounded to avoid electrical charges. Store separately from oxidizers.

SENSITIVITY TO STATIC DISCHARGE

Take precautionary measures against static discharges.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

OCCUPATIONAL EXPOSURE LIMITS		TWA	TWA	STEL	STEL
		ppm	mg/m ³	ppm	mg/m ³
ACGIH/TLV	NAPHTHALENE	10	52	15	79
	TRIMETHYL BENZENE	25	123		
CHINA	NAPHTHALENE		50		75
	Hong Kong				
INDONESIA	NAPHTHALENE	10	52	15	79
	TRIMETHYL BENZENE	25	123		
KOREA	NAPHTHALENE	10	52	15	79
	TRIMETHYL BENZENE	25	123		
	NAPHTHALENE	10	50	15	75
	TRIMETHYL BENZENE	25	125		

**MATERIAL SAFETY DATA SHEET**

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MALAYSIA	NAPHTHALENE	10	52		
	TRIMETHYL BENZENE (MIXED ISOMERS)	25	123		
OSHA/PEL	NAPHTHALENE	10	50	15	75
	TRIMETHYL BENZENE	25	125		
THE PHILIPPINES	NAPHTHALENE	10	50		
SINGAPORE	NAPHTHALENE	10	52	15	79
	TRIMETHYL BENZENE	25	123		
Taiwan	NAPHTHALENE	10	52		
	TRIMETHYL BENZENE	25	123		

MONITORING MEASURES

A small volume of air is drawn through an absorbant or barrier to trap the substance(s) which can then be desorbed or removed and analyzed as referenced below:

Substance(s)	Method	Analysis	Absorbant
Trimethylbenzene	US OSHA: CIM	Gas chromatography	Charcoal
Naphthalene	US NIOSH: 1501	Gas chromatography	Charcoal

ENGINEERING MEASURES

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.

PERSONAL PROTECTION**GENERAL ADVICE**

The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with side-shields and workclothes protecting arms, legs and body be used. In addition any person visiting an area where this product is handled should at least wear safety glasses with side-shields.

RESPIRATORY PROTECTION

Where concentrations in air may exceed the limits given in this section, the use of a half face filter mask or air supplied breathing apparatus is recommended. A suitable filter material depends on the amount and type of chemicals being handled. Consider the use of filter type: Organic vapor cartridge with a Particulate pre-filter. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION

PVC gloves

SKIN PROTECTION

Wear standard protective clothing.

EYE PROTECTION

When handling this product, the use of splash chemical goggles is recommended.

HYGIENE RECOMMENDATIONS

Use good work and personal hygiene practices to avoid exposure. Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

ENVIRONMENTAL EXPOSURE CONTROL PRECAUTIONS

Consider the provision of containment around storage vessels.

**MATERIAL SAFETY DATA SHEET**

PRODUCT

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9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Brown
FLASH POINT	62 °C
SPECIFIC GRAVITY	0.95
VISCOSITY	4.8 cPs @ 40 °C
VAPOUR PRESSURE	1.0 kPa

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY**STABILITY**

Stable under normal conditions.

HAZARDOUS POLYMERIZATION

Hazardous polymerization will not occur.

CONDITIONS TO AVOID

Heat and sources of ignition including static discharges.

MATERIALS TO AVOID

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors.

HAZARDOUS DECOMPOSITION PRODUCTS

Under fire conditions: Oxides of carbon

11. TOXICOLOGICAL INFORMATION**ACUTE TOXICITY DATA :**

No toxicity studies have been conducted on this product.

SENSITIZATION :

This product is not expected to be a sensitizer.

CARCINOGENICITY :

This product contains naphthalene. The International Agency for Research on Cancer (IARC) has evaluated naphthalene and determined it to be possibly carcinogenic to humans (Group 2B, based on sufficient evidence in experimental animals and inadequate evidence in humans).

HUMAN HAZARD CHARACTERIZATION :

Based on our hazard characterization, the potential human hazard is: High

12. ECOLOGICAL INFORMATION**ECOTOXICOLOGICAL EFFECTS :**

No toxicity studies have been conducted on this product.

ENVIRONMENTAL HAZARD CHARACTERIZATION

Based on our hazard characterization, the potential environmental hazard is: Moderate



MATERIAL SAFETY DATA SHEET

PRODUCT

PX0191

13. DISPOSAL CONSIDERATIONS

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

Empty drums should be taken for recycling, recovery, or disposal through a suitably qualified or licensed contractor.

NATIONAL REGULATIONS, CHINA

Comply with local regulations.

NATIONAL REGULATIONS, INDIA

Dispose of unused product in accordance with the "Hazardous Wastes (Management and Handling) Rules 1989" and local and State legislation, as applicable.

NATIONAL REGULATIONS, INDONESIA

Dispose of unused product in accordance with "Government Regulation No.19/1994 On the Treatment of Dangerous And Toxic Waste" (and amendments) as applicable.

NATIONAL REGULATIONS, KOREA

Waste disposal should comply with the Waste Control Act.

NATIONAL REGULATIONS, MALAYSIA

Dispose of in accordance with the Environmental Quality (Scheduled Wastes) Regulation 1989 and other guidelines issued by DOE and/or local authorities.

NATIONAL REGULATIONS, PHILIPPINES

Dispose of in accordance with Presidential Decree No. 984-1976 ("The Pollution Control Law"); DENR Department Administrative Order No.29-92 ("The Implementing Rules or Regulations of RA6969") and Presidential Decree No.825.

NATIONAL REGULATIONS, SINGAPORE

Dispose of waste in accordance with the Environmental Health Act (Chapter 95, Rg 11), Environmental Public Health (Toxic Industrial Waste) Regulations 1990 Ed.

NATIONAL REGULATIONS, THAILAND

Dispose of hazardous waste in accordance with the "The Notification of the Ministry of Industry No. 6B.E. 2450, subject : Disposal of Wastes or Unusable Materials ", "The Notification of the Ministry of Industry No. 1B.E. 2451, subject : Disposal of Wastes or Unusable Materials ".

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.:

LAND TRANSPORT:

Proper Shipping Name

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

NATIONAL REGULATIONS, CHINA

Comply with local regulations.

NATIONAL REGULATIONS, INDIA

Transport in accordance with the Central Motor Vehicles Rules 1989.

NATIONAL REGULATIONS, INDONESIA



MATERIAL SAFETY DATA SHEET

PRODUCT

PX0191

Transport in accordance with all government regulations, including "Regulation of the Minister of Health No.453/Man.Kes/PER/XI/1983.

NATIONAL REGULATIONS, KOREA

Land transport should comply with the Ministerial Decree of Toxic Chemicals Control Law and the Regulations Regarding the Fire Fighting Techniques Standards, as applicable.

NATIONAL REGULATIONS, MALAYSIA

There are no regulations specifically governing the transport of chemicals. Use best practice.

NATIONAL REGULATIONS, PHILIPPINES

Transport in accordance with the following legislation (as applicable): Presidential Decree No. 1185, 1977 ("Fire Code of the Philippines") and implementing rules and regulations; Presidential Decree No. 856, 1975 ("Code of Sanitation"); Republic Act No 6969, 1990 ("Toxic Substances and Hazardous and Nuclear Wastes Control Act") and implementing rules and regulations.

NATIONAL REGULATIONS, SINGAPORE

Land Transport complies with the Environmental Pollution Control (Hazardous Substances) Regulations 1999, which follows the "Specification for Caution Labelling for Hazardous Substances" - Singapore Standard 286 (1984).

NATIONAL REGULATIONS, THAILAND

The product should be transported in accordance with "Hazardous Substances Acts B.E.2535", "Notification of Ministry of Public Health Re: Label and Level of Toxicity of Dangerous Articles Which are Under the Responsibility of Food and Drug Administration 2534 (If applicable)" and "Notification of Land Transportation Department, Subject : Label of truck which contain hazardous material, Notification date : 14 November B.E.2543 (14 November 2000)".

AIR TRANSPORT (ICAO/IATA)

Proper Shipping Name

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

MARINE TRANSPORT (IMDG/IMO)

Proper Shipping Name

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

NATIONAL REGULATIONS, EUROPE AND MALAYSIA

European:

HAZARD SYMBOLS:



CLASSIFICATION:

HARMFUL / Xn

DANGEROUS FOR THE ENVIRONMENT / N

Contains: Heavy Aromatic Naphtha, Naphthalene

RISK PHRASES:

- R40 Limited evidence of a carcinogenic effect.
- R65 Harmful: may cause lung damage if swallowed.
- R66 Repeated exposure may cause skin dryness or cracking.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R67 Vapours may cause drowsiness and dizziness.

Malaysian:

HAZARD SYMBOLS:



CLASSIFICATION: HARMFUL / Xn

Contains: Naphthalene, Heavy Aromatic Naphtha

RISK PHRASES:

- R40 Limited evidence of a carcinogenic effect.
- R65 Harmful: may cause lung damage if swallowed.
- R66 Repeated exposure may cause skin dryness or cracking.
- R67 Vapours may cause drowsiness and dizziness.

SAFETY PHRASES:

- S23C Do not breathe vapor.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S57 Use appropriate containment to avoid environmental contamination.
- S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

INTERNATIONAL REGULATIONS :

NFPA RATING

HEALTH: 2 FLAMMABILITY: 2 INSTABILITY: 0 OTHER: 0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

INTERNATIONAL CHEMICAL CONTROL LAWS

TOXIC SUBSTANCES CONTROL ACT (TSCA)

This product has not been evaluated for TSCA and may contain substances not found on the TSCA 8(b) Inventory List. This product may be used under the TSCA 5(h)(3) Research Exemption if all requirements are met.

16.	OTHER INFORMATION
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**MATERIAL SAFETY DATA SHEET**

PRODUCT

PX0191

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, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

ADDRESSES AND CONTACT POINTS:

NALCO INDUSTRIAL SERVICES (SUZHOU) CO LTD; 88 Ta Yuan Road, Suzhou New Development Zone, Jiangsu 215011 PRC Contact: Sam Chen, 86-512-68255001

NALCO INDIA LIMITED; 20/A Park St, Calcutta 700016 India

PT NALCO INDONESIA; Jl. Pahlawan, Desa Karang Asem Timur, Citeureup, Bogor, Indonesia

NALCO KOREA LIMITED; 11th Fl, 63BLDG, 60, Yoido-dong Young Deung Po-Gu, Seoul, Korea

NALCO INDUSTRIAL SERVICES MALAYSIA SDN BHD; No 1, Jalan Jururancang U1/21, Seksyen U1, Hicom-Glenmarie Industrial Park, 40150 Shah Alam, Selangor Darul Ehsan, Malaysia

NALCO PHILIPPINES INC; Barrio Real, Calamba, Laguna, Philippines

NALCO PACIFIC PTE LTD; 21 Gul Lane, Jurong Town, Singapore 629416

NALCO INDUSTRIAL SERVICES (THAILAND) CO LTD; Rayong Plant, 109/19 M00 4, Eastern Seaboard Industrial Estate, Soi ESIE 6, T. Pluakdaeng, A. Pluakdaeng Rayong 21140 Thailand

EMERGENCY TELEPHONE NUMBER(S):

CHINA:	512-68255001
KOREA:	02-789-6961
INDIA:	0-33-6740395
INDONESIA:	62-21-8753175
MALAYSIA:	603-5569 4118
THE PHILIPPINES:	63-49-5451550
SINGAPORE:	65-6861-4011
THAILAND:	38-955-160

Prepared By Nalco Asia Pacific, Safety, Health and Environment (SHE) Specialist

Date issued 22-Sept-05

Replaces -

MATERIAL SAFETY DATA SHEET

Product Trade Name: RM-63™

Revision Date: 03-Jan-2008

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: RM-63™
Synonyms: None
Chemical Family: Polymerized Fatty Acids
Application: Rheology Modifier
Manufacturer/Supplier: Baroid Fluid Services
 Product Service Line of Halliburton
 P.O. Box 1675
 Houston, TX 77251
 Telephone: (281) 871-4000
 Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
 Telephone: 1-580-251-4335
 e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Fatty acids, C18 unsaturated, dimers	61788-89-4	94-100	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye and skin irritation.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin: Wash with soap and water. Get medical attention if irritation persists.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion: Under normal conditions, first aid procedures are not required.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	475
Flash Point/Range (C):	247
Flash Point Method:	COC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 1, Flammability 0, Reactivity 0
HMIS Ratings: Flammability 0, Reactivity 0, Health 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Wash hands after use.

Storage Information Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Dark
Odor:	Fatty acid

9. PHYSICAL AND CHEMICAL PROPERTIES

pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	0.95
Density @ 20 C (lbs./gallon):	7.9
Bulk Density @ 20 C (lbs/ft ³):	Not Determined
Boiling Point/Range (F):	572
Boiling Point/Range (C):	300
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	< 0.001
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	0
Evaporation Rate (Butyl Acetate=1):	< 1
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye and skin contact.
Inhalation	None known.
Skin Contact	May cause mild skin irritation.
Eye Contact	May cause mild eye irritation.
Ingestion	None known
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: > 20,000 mg/kg (Rat)
Dermal Toxicity:	Not determined

Inhalation Toxicity: Not determined
Primary Irritation Effect: Not determined
Carcinogenicity: Not determined
Genotoxicity: Not determined
Reproductive / Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined
Persistence/Degradability Not determined
Bio-accumulation Not Determined

Ecotoxicological Information

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined
Other Information Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	None
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	Un-Controlled

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative. For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
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Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.
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END OF MSDS

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **SODA ASH**

Revision Date: 04-Jan-2010

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: SODA ASH
Synonyms: None
Chemical Family: Carbonate
Application: Buffer

Manufacturer/Supplier: Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Sodium carbonate	497-19-8	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation: If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin: Wash with soap and water. Get medical attention if irritation persists.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician: Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 0, Reactivity 0

HMIS Ratings: Health 2, Flammability 0, Reactivity 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

Storage Information Store away from acids. Store in a cool, dry location. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Localized ventilation should be used to control dust levels.

Personal Protective Equipment If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection Dust/mist respirator. (95%)

Hand Protection Normal work gloves.

Skin Protection Normal work coveralls.

Eye Protection Dust proof goggles.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Powder
Color:	White
Odor:	Odorless
pH:	11.5
Specific Gravity @ 20 C (Water=1):	2.5
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft ³):	48- 62
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Partially soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	105.99

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong acids.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation.
Skin Contact	Prolonged or repeated contact may cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.