



Shearforce Ltd. Co.

Section IV: MSDS SF-1000, SF-ACL – Technical Explanation

MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY NUMBER: (800) 424-9300 CHEMTREC

REVISED – November 2007

I. PRODUCT IDENTIFICATION:

Shearforce SF-1000™
Shearforce Ltd. Co.,
5510 S. Westmoreland Rd. #300
Dallas, TX 75237

II. PRODUCT INFORMATION:

FORM: Liquid
COLOR: Clear Blue
All chemical ingredients appear on the EPA TSCA inventory

Shearforce SF-1000™
ODOR: Bland
FORMULA: Proprietary

III. PHYSICAL AND CHEMICAL DATA:

BOILING POINT: 212°
SPECIFIC GRAVITY: 0.999
VAPOR DENSITY: N/A
Polycyxyethylene Ethers: - Sodium bis (2-ethyhexyl) sulfosuccinate - CAS # 577-11-7
Alkoxylyated Alcohols: C10-12 ethoxylyated propoxylyated - CAS # 68154-97-2.
FREEZING POINT: 23 F
VAPOR PRESSURE (m HG): N/A
SOLUBILITY IN H₂O: Soluble

IV. REACTIVITY:

STABILITY: Stable
DECOMPOSITION PRODUCTS: N/A
HAZARDOUS POLYMERIZATION: N/A

INCOMPATIBILITY: Strong acids and bases

V. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: >200° F
EXTINGUISHING MEDIA: Non-Flammable
FIRE FIGHTING PROCEDURES: None
UNUSUAL FIRE HAZARDS: None

pH: 7.2

VI. HEALTH HAZARD DATA:

EYE CONTACT: Wash eye thoroughly for 15 minutes: including upper and lower lids. Seek medical assistance.
SKIN CONTACT: Irritation possible, wash with soap and water for 15 minutes. If irritation persists, call physician.
INHALATION: Move to well ventilated area: if breathing difficulties persist after 15 minutes, seek medical assistance.
INGESTION: If conscious, administer 2 glasses of water. Seed medical assistance. Do not induce vomiting unless directed.
ACUTE: May irritate eyes, respiratory tract, skin.
CHRONIC: Prolonged contact with skin may result in dryness due to removal of skin oil.



VII. SPILL & DISPOSAL DATA;

ACCIDENTAL SPILLPROCEDURES: Absorb in inert material & place in DOT approved containers for disposal in accordance with local, state, and federal regulations. Larger spills may be collected and repackaged.
HANDLING AND STORAGE: Keep tightly closed, store in a cool, dry place.

VIII. PROTECTIVE EQUIPMENT TO BE USED:

GLOVES: Rubber
VENTILATION: Recommended
RESPIRATORY PROTECTION: Respirator in confined areas.
OTHER PROTECTIVE EQUIPMENT: As required to avoid skin contact.
EYE PROTECTION: Goggles recommended
EXHAUST: Mechanical/local

IX. TRANSPORT INFORMATION:

The following may not apply to all shipping situations. Consult 49 CFR mode specific/quantity -specific shipping data.

DOT PROPER SHIPPING NAME: Not regulated
DOT HAZARD CLASS/DIVISION: Not hazardous
TYPE LABEL REQUIRED: None
DOT IDENTIFICATION: N/A
DOT PACKAGING GROUP: N/A

**For specific Ltd. Qty. requirement, see DOT regulation 49 CFR*

ATTENTION: To the best of our knowledge, the information contained herein is accurate. However, TECI does not assume any liability for the accuracy or completeness of this information. Final determination of the suitability of any material is the sole responsibility of the user. All materials may present unknown health hazards and should be used with caution. Any product which is not in conformance with this DATA SHEET or which involves using the product in combination with any other process is the sole responsibility of the user.

SF-1000 is private labeled with permission and consent of Texas Envirochem, it's agents and/or assignees.

Complies with OSHA's Hazard Communication Standard 20 CFR 1010.1200

MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY NUMBER: (800) 424-9300 CHEMTREC
REVISED – November 2005

- II. PRODUCT IDENTIFICATION: Shearforce SF-ACL™
Shearforce Ltd. Co.,
5510 S. Westmoreland Rd. #300
Dallas, TX 75237
- III. PRODUCT INFORMATION: Shearforce SF-ACL™
FORM: Liquid ODOR: Lavender
COLOR: Clear Amber Liquid FORMULA: Proprietary
- IV. PHYSICAL AND CHEMICAL DATA: FREEZING POINT: N/A
BOILING POINT: 350° VAPOR PRESSURE (m HG): 4.7
SPECIFIC GRAVITY: 0.087 SOLUBILITY IN H₂O: Negligible
VAPOR DENSITY: 1.0
Sodium Sulfonate as an alcoholic solution: CAS #68956-56-9
- V. REACTIVITY: INCOMPATIBILITY: None
STABILITY: Stable
DECOMPOSITION PRODUCTS: N/A
- VI. FIRE AND EXPLOSION HAZARD DATA: pH: N/A
FLASH POINT: 125-135° F
EXTINGUISHING MEDIA: Water, Dry Chemical, Foam CO₂
FIRE FIGHTING PROCEDURES: Self contained breathing apparatus and protective clothing.
UNUSUAL FIRE HAZARDS: Avoid heat, sparks, and open flame.
- VII. HEALTH HAZARD DATA:
EYE CONTACT: Wash eye thoroughly for 15 minutes: including upper and lower lids. Seek medical assistance.
SKIN CONTACT: Irritation possible, wash with soap and water for 15 minutes. If irritation persists, call physician.
INHALATION: Move to well ventilated area: if breathing difficulties persist after 15 minutes, seek medical assistance.
INGESTION: If conscious, administer 2 glasses of water. Seek medical assistance. Do not induce vomiting unless directed.
ACUTE: May irritate eyes, respiratory tract, skin.
CHRONIC: Prolonged contact with skin may result in dryness due to removal of skin oil.
- VIII. SPILL & DISPOSAL DATA;
ACCIDENTAL SPILLPROCEDURES: Absorb in inert material & place in DOT approved containers for disposal in accordance with local, state, and federal regulations. Larger spills may be collected and repackaged.
HANDLING AND STORAGE: Keep tightly closed, store in a cool, dry place.
- IX. PROTECTIVE EQUIPMENT TO BE USED:
GLOVES: Rubber EYE PROTECTION: Goggles recommended
VENTILATION: Recommended EXHAUST: Mechanical/local
RESPIRATORY PROTECTION: Respirator in confined areas.
OTHER PROTECTIVE EQUIPMENT: As required to avoid skin contact.
- X. TRANSPORT INFORMATION:
The following may not apply to all shipping situations. Consult 49 CFR mode specific/quantity -specific shipping data.
DOT PROPER SHIPPING NAME: Not regulated DOT IDENTIFICATION: N/A

Shearforce Ltd. Co.

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DOT HAZARD CLASS/DIVISION: Not hazardous

DOT PACKAGING GROUP: N/A

TYPE LABEL REQUIRED: None

**For specific Ltd. Qty. requirement, see DOT regulation 49 CFR*

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Complies with OSHA's Hazard Communication Standard 20 CFR 1010.1200

Technical Explanation

The following is a Technical Explanation of Shearforce SF-1000™ and SF-ACL™ SF-ACL. Both formulations are based upon compounds that are totally bio-degradable. They will never be shipped as raw chemicals, only as completed concentrates which are water based and non-hazardous.

Chemical: SF-1000™

Shearforce SF-1000™ is the base formulation used in several products offered by Texas EnviroChem, Inc. for a large array of industrial applications.

Chemical Composition:

Shearforce SF-1000™ is based on a nonionic surfactant, composed of:

Polycxyethylene Ethers: - Sodium bis (2-ethyhexyl) sulfosuccinate - CAS # 577-11-7

Alkoxylated Alcohols: C10-12 ethoxylated propoxylated - CAS # 68154-97-2.

D.O.T. classification is non-regulated. The freight classification is a cleaning compound.

Purpose:

Shearforce SF-1000™ is a concentrated water based synergistic blend of synthetic biodegradable, non-toxic, non-flammable surfactants. The surfactant action of Shearforce SF-1000™ allows it to emulsify hydrocarbon contaminants into microscopic droplets suspended in solution. This emulsion remains stable in the rinse and/or treated media. It does not contain any enzyme or microbe. It is nonhazardous.

Uses:

Shearforce SF-1000™ plays an important role in biodegrading hydrocarbon contaminants and converting them to an emulsion that is easily biodegradable by naturally occurring microorganisms. Shearforce SF-1000™ is used for bioremediation of hydrocarbons. Shearforce SF-1000™ functions not only as an emulsifier of hydrocarbon contaminants but also represents a food source that promotes the growth and metabolic activity of the micro-flora present. The net effect is an increase in the rate of hydrocarbon biodegradation.

This methodology provides a multitude of benefits when using Shearforce SF-1000™ for spill response, in-situ bioremediation of drill cuttings, water treatment and cleaning applications.

Benefits:

Because Shearforce SF-1000™ is a non-hazardous, non-flammable, water-soluble liquid, it can be used for removing oil and grease on surfaces while providing the following benefits:

- ? Will not diminish the integrity of surfaces
- ? Very fast working (TCEQ-1005 TPH testing)
- ? Contains no ozone depleting solvents
- ? Non-toxic (EPA LC50 testing)
- ? Non-chlorinated
- ? Does not leave volatile or semi-volatile organics (EPA 8260B & 8070C tests)
- ? 100% biodegradable
- ? Provides odor control
- ? Promotes vegetation growth

Chemical: SF-ACL

Chemical Composition:

Shearforce SF-ACL™ SF-ACL is based on an anionic solvent, composed of:

Sodium Sulfonate as an alcoholic solution: CAS #68956-56-9

SF-ACL™ is a biodegradable terpene extract which is a solvent.

D.O.T. (Department of Transportation) Hazard Class is # 3. The freight classification is cleaning compound.

Purpose:

Shearforce SF-ACL™ creates a chemical reaction with the Sludge once it is sprayed and allowed to settle for 24 hours. This allows time for the chemical to react with the sludge and makes the sludge capable of being pumped into a transport truck or a holding tank

Uses:

SF-ACL™ is used to liquefy hardened sludge by adding 6% by volume. The SF-ACL™ becomes part of the oil which will not separate. The result is a burner fuel with a flash point of 135 to 150 degrees F.

This methodology provides a multitude of benefits when using Shearforce SF-ACL™ for removing oil sludge from sludge pits and oil storage tanks.

Benefits:

- ? Environmentally safe replacement for chlorinated hydrocarbon solvents
- ? Rapidly dissolves asphaltic or other harden petroleum products
- ? Blends with and becomes part of the liquefied petroleum product
- ? Reduces flash point of heavy crude's to 135-145 degrees F
- ? Decomposition products are CO2 and water (biodegradable)
- ? Clear amber liquid
- ? Lavender odor
- ? 0.84 specific gravity @ 25°C
- ? >1.0 vapor density
- ? 320°F boiling point
- ? 108°F TCC Flashpoint
- ? 2 mmHg at 20°C vapor pressure

Section VI: Experience

PARTIAL LIST EXPERIENCE of SHEARFORCE

OIL & GAS APPLICATIONS

CLIENT/CUSTOMER: NAOC

SCOPE: EVACUATION, TREATMENT (INSITU) AND DISPOSAL OF WBM DRILL CUTTINGS AT SAMABRI BIENI FLOWSTATION

WORK: TURNKEY ENGINEERING, DESIGN, SUPPLY OF EQUIPMENT, MANPOWER AND SHEARFORCE CHEMICAL SYSTEM FOR THE CLEANING OF DRILL CUTTINGS.

CLIENT/CUSTOMER: SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA

SCOPE: REBUILD OF SULZER MULTI STAGE PUMPS

WORK: ENGINEERING, DESIGN AND REBUILD OF SULZER MULTI STAGE PUMPS WITH SHEARFORCE PATENTED SHEARFORCE ROTORS.

CLIENT/CUSTOMER: NAOC

SCOPE: SHEARFORCE SLUDGE PUMPS

WORK: TURNKEY ENGINEERING, DESIGN, SUPPLY, INSTALLATION OF SHEARFORCE SLUDGE PUMPS FOR THE PUMPING OF HEAVY SLUDGE.

CLIENT/CUSTOMER: SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA

SCOPE: SCADA/TELEMETRY SYSTEM FOR PRODUCTION STATION MONITORING

WORK: ENGINEERING, DESIGN, and SUPPLY OF TELEMETRY SYSTEM FOR PRODUCTION STATION MONITORING.

CLIENT/CUSTOMER: SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA

SCOPE: CONTROL SHUTDOWN SYSTEM FOR JONES CREEK PUMPING STATION (30,000 BBL/DAY.)

WORK: ENGINEERING, DESIGN, and SUPPLY OF CONTROL SYSTEM FOR SIX MAIN CRUDE OIL SHIPPING PUMPS.

CLIENT/CUSTOMER: CHEVRON FOR GULF OIL NIGERIA

SCOPE: FIREWATER PUMPS WITH ENGINE, FITTINGS AND CONTROL PANEL

WORK: ENGINEERING, DESIGN, FABRICATION, and SUPERVISION OF INSTALLATION FOR FIREWATER PUMP SYSTEM FOR OFFSHORE PRODCUTION PLATFORMS.

CLIENT/CUSTOMER: BARRIVEN/LAGOVEN, VENEZUELA

SCOPE: LOCAL CONTROL PANELS FOR OIL PUMPING STATION FOR VARIABLE SPEED GEAR/PUMP/MOTOR WITH LUBE OIL/COOLER SYSTEM.

WORK: ENGINEERING, DESIGN, INSTALLATION OF CONTROL EQUIPMENT FOR INTERFACE TO MAIN CONTROL SCADA SYSTEM.

CLIENT/CUSTOMER: CHINESE NATIONAL PETROLEUM

SCOPE: MAIN PIPELINE PUMPING STATIONS WITH CAT 399 ENGINES

WORK: ENGINEERING, DESIGN, and INSTALLATION OF CONTROL EQUIPMENT FOR INTERFACE TO MAIN CONTROL SCADA SYSTEM.

CLIENT/CUSTOMER: ECOPETROL, COLUMBIA

SCOPE: 5 KV SWITCHGEAR

WORK: ENGINEERING AND EQUIPMENT SUPPLY.

CLIENT/CUSTOMER: BROWN & ROOT FOR EXXON

SCOPE: SURGE ARRESTER NEMA 6 PACKAGE FOR 5 KV MOTORS

WORK: ENGINEERING, DESIGN, and SUPPLY OF EQUIPMENT.
