



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material Name SHALE SURF 1000
Revision Date 12/21/2011
Version # 6
Product Use Surfactant.
Manufacturer / Supplier FRAC TECH SERVICES LLC
2500 HWY 62 West
Chickasha, OK 73018
US
General information: 1-405-222-2300
Emergency 24 Hour Emergency: INFOTRAC: 1-800-535-5053

2. Hazards Identification

Physical State Liquid.
Appearance Yellow-orange liquid.
Emergency Overview WARNING!
Causes skin and eye irritation. Mist or vapor irritating to eyes and respiratory tract. Combustible liquid and vapor.
OSHA regulatory status This product is hazardous according to OSHA 29 CFR 1910.1200.
Routes of exposure Inhalation. Eyes. Skin.
Eyes Causes eye irritation.
Skin Causes skin irritation.
Inhalation Causes respiratory tract irritation.
Ingestion No harmful effects expected in amounts likely to be ingested by accident.
Potential environmental effects Not expected to be harmful to aquatic organisms.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Ethoxylated alcohol	Proprietary	5 - 20
2-Butoxyethanol	111-76-2	1 - 10
2-Propanol	67-63-0	1 - 10
Cyclohexene	5989-27-5	1 - 10
Methanol	67-56-1	1 - 10

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye Contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.
Skin Contact Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Inhalation Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion Seek medical advice.

Notes to physician

Not available.

5. Fire Fighting Measures

Flammable Properties

Combustible liquid and vapor. Use water with caution: Material will float and may ignite on the surface of water.

Extinguishing media

Suitable extinguishing media

Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media

Not available.

Specific Hazards arising from the Chemical

Not available.

Firefighting equipment / instructions

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific Methods

Use water spray to cool unopened containers.

Hazardous combustion products

Carbon oxides.

6. Accidental Release Measures

Personal precautions

Wear appropriate personal protective equipment (See Section 8).

Methods for cleaning up

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste for proper disposal.

Large Spills: Flush area with water. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7. Handling and Storage

Handling

Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Storage

Keep away from heat, sparks, and flame. Keep container closed. Store away from incompatible materials (See Section 10).

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.	Not available.	Not available.
2-Butoxyethanol	20	Not available.	Not available.	Not available.
2-Propanol	200	Not available.	400	Not available.
Cyclohexene	Not available.	Not available.	Not available.	Not available.
Methanol	200	Not available.	250	Not available.

US. OSHA Table Z-1 Limits for Air Contaminates (29 CFR 1910.1000)

Components	PEL	
	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.
2-Butoxyethanol	50	240

2-Propanol	400	980
Cyclohexene	Not available.	Not available.
Methanol	200	260

Canada. Alberta OELs (Occupational Health Safety Code, Schedule 1, Table 2)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.	Not available.	Not available.
2-Butoxyethanol	20	97	Not available.	Not available.
2-Propanol	200	492	400	984
Cyclohexene	Not available.	Not available.	Not available.	Not available.
Methanol	200	262	250	328

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.	Not available.	Not available.
2-Butoxyethanol	20	Not available.	Not available.	Not available.
2-Propanol	200	Not available.	400	Not available.
Cyclohexene	Not available.	Not available.	Not available.	Not available.
Methanol	200	Not available.	250	Not available.

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.	Not available.	Not available.
2-Butoxyethanol	20	Not available.	Not available.	Not available.
2-Propanol	200	Not available.	400	Not available.
Cyclohexene	Not available.	Not available.	Not available.	Not available.
Methanol	200	260	250	325

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) Components

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.	Not available.	Not available.

2-Butoxyethanol	20	97	Not available.	Not available.
2-Propanol	400	983	500	1230
Cyclohexene	Not available.	Not available.	Not available.	Not available.
Methanol	200	262	250	328

Mexico. Occupational Exposure Limit Values

Components	TWA		STEL	
	ppm	mg/m3	ppm	mg/m3
Ethoxylated alcohol	Not available.	Not available.	Not available.	Not available.
2-Butoxyethanol	26	120	75	360
2-Propanol	400	980	500	1225
Cyclohexene	Not available.	Not available.	Not available.	Not available.
Methanol	200	260	250	310

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Wear safety glasses with side shields (or goggles).
Skin protection	Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister.
General hygiene consideration	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and Chemical Properties

Appearance:	Yellow-orange liquid.
Color	Yellow-orange.
Odor	Mild. Citrus
Odor threshold	Not available.
Physical State	Liquid.
Form	Liquid.
pH	7 - 8
Melting point	Not available.
Freezing point	27 °F (-2.8 °C)
Boiling point	190.4 °F (88 °C)
Flash point	120 °F (48.9 °C)

Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific Gravity	0.99 (25°C)
Solubility (water)	Soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Bulk Density	8.26 lb/gal
VOC	Not available.
Viscosity	Not available.
Percent volatile	Not available.

10. Chemical Stability Reactivity Information

Chemical Stability	Material is stable under normal conditions.
Conditions to avoid	Keep away from heat, sparks, and flame.
Incompatible material	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reaction	Hazardous polymerization does not occur.

11. Toxicology Information

Toxicological Data

Components	Test Results
Ethoxylated alcohol	Not available.
2-Butoxyethanol	Not available.
2-Propanol	Not available.
Cyclohexene	Not available.
Methanol	Not available.

Sensitization This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Carcinogenicity

Ethoxylated alcohol Not available.

2-Butoxyethanol ACGIH Carcinogens: A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity:3 Not classifiable as to carcinogenicity to humans.

2-Propanol	ACGIH Carcinogens: A4 Not classifiable as a human carcinogen.
Cyclohexene	IARC Monographs. Overall Evaluation of Carcinogenicity: 3 Not classifiable as to carcinogenicity to humans.
Methanol	Not available.

Epidemiology	Not available.
Mutagenicity	Not available.
Reproductive effects	Not available.
Teratogenicity	Not available.
Further Information	US ACGIH Threshold Limit Values: Skin designation Methanol (CAS 67-56-1) Can be absorbed through the skin.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Ethoxylated alcohol	Not available.
2-Butoxyethanol	Not available.
2-Propanol	Not available.
Cyclohexene	Not available.
Methanol	Not available.

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	No data available.
Bioaccumulation / Accumulation	No data available.
Mobility in environmental media	No data available.
Partition coefficient (n-octanol/water)	Not available.

13. Disposal Considerations

Waste codes	D001: Waste Flammable material with a flash point <140 °F
Disposal instructions	Dispose of contents/container in accordance with local/regional/national/international regulations. When this product as supplied is to be discarded as waste, it may meet the definition of a RCRA waste under 40 CFR 261.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

UN number	UN1993
Proper shipping name	Combustible liquids, n.o.s.(Contains 2-propanol 10%, Methanol 10%)
Hazard class	3
Packing Group	III
Labels required	None

DOT reportable quantity 100
Additional information
Special provisions
Packaging exceptions
Packaging non bulk
Packaging bulk
ERG number

IATA

UN number 1993
Proper shipping name Flammable liquid, n.o.s. (2-propanol, methanol)
Hazard class 3
Packing group III
Additional information
ERG code 3L

IMDG

UN number 1993
Proper shipping name FLAMMABLE LIQUID, N.O.S. (2-PROPANOL, METHANOL)
Hazard class 3
Packing group III
EmS No F-E, S-E*
IMDG Additional information:

15. Regulatory Information

US federal regulation This product is hazardous according to OSHA 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA (Superfund) Reportable Quantity: 2-Propanol : 100
Methanol: 5000

Superfund amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard:	Yes
	Delayed Hazard:	No
	Fire Hazard:	Yes
	Pressure Hazard:	No
	Reactivity Hazard:	No

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)
Not regulated.

US CAA Section 112 Hazardous Air Pollutants (HAPs) List
METHANOL (CAS 67-56-1)

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration
2-Butoxyethanol (CAS 111-76-2) 1.0 % N230
2-Propanol (CAS 67-63-0) 1.0 %
Methanol (CAS 67-56-1) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance
2-Butoxyethanol (CAS 111-76-2) N230 Listed.
2-Propanol (CAS 67-63-0) Listed.
Methanol (CAS 67-56-1) Listed.

Section 302 extremely hazardous substance (40 CRF 355, Appendix A): No

Section 311/312 (40 CFR 370): No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15): Not controlled

Inventory Status

Country	Inventory Name	On Inventory *
Australia	AICS	No
Canada	DSL	Yes
Canada	NDSL	No
China	IECSC	No
Europe	EINECS	No
Europe	ELINCS	No
Japan	ENCS	No
Korea	ECL	No
New Zealand	NZI	No
United States / Puerto Rico	TSCA	Yes
Phillipines	PICCS	No

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

WHMIS Information

WHMIS status: Controlled

WHMIS classification B3 - Flammable/Combustible: D2B - Other Toxic Effects-TOXIC

State Regulation

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

US - California Hazardous Substances (Director's): Listed substance
2-Butoxyethanol (CAS 111-76-2) Listed.
2-Propanol (CAS 67-63-0) Listed.
Methanol (CAS 67-56-1) Listed.

US - Massachusetts RTK - Substance: Listed substance
2-Butoxyethanol (CAS 111-76-2) Listed.
2-Propanol (CAS 67-63-0) Listed.
Methanol (CAS 67-56-1) Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold
2-Butoxyethanol (CAS 111-76-2) 500 LBS
2-Propanol (CAS 67-63-0) 500 LBS
Methanol (CAS 67-56-1) 500 LBS

US - New Jersey RTK - Substances: Listed substance
2-Butoxyethanol (CAS 111-76-2) Listed.
2-Propanol (CAS 67-63-0) Listed.
Cyclohexene (CAS 5989-27-5) Listed.
Methanol (CAS 67-56-1) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance
2-Butoxyethanol (CAS 111-76-2) Listed.
2-Propanol (CAS 67-63-0) Listed.
Methanol (CAS 67-56-1) Listed.

16. Other Information

Further Information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 2
Flammability: 2
Physical Hazard: 0

A HMIS® rating including an * indicates a chronic hazard.

NFPA ratings

Health: 2

Flammability: 2

Instability: 0

Disclaimer

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Issue Date

12/21/2011