Schlumberger

MATERIAL SAFETY DATA SHEET

(USA)

(Complies with USA OSHA 29 CFR 1910.1200 and ANSI Z 400.1)

Version: 2 *Revision date:* 23 May 2008

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

Product code: **F109**

Product name: **Foaming Agent F109**

Company identification: **Schlumberger Technology Corporation**
110 Schlumberger Drive
Sugar Land, Texas 77478, USA
Telephone: 1-281-285-7873

Emergency telephone number: **USA: +1-281-595-3518 (24hr)**

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING

Main physical hazards: Combustible liquid.

Main health hazards: Irritating to skin. Severe eye irritation.

Main environmental hazards: Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Other hazards: Contaminated surfaces will be extremely slippery.

Precautions: Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly after handling. Keep away from heat, sparks, and flame. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Vapors may cause flash fire or explosion. Wear suitable protective equipment. Storage temperature not to exceed 49 °C (120 °F).

HMIS classification: Health: **2** Flammability: **2** Physical hazard: **0**

Form: Liquid **Color:** Colorless - Clear pale yellow **Odor:** Alcohols

Principle routes of exposure:
Skin contact. Eye contact. Respiratory system.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components classified as hazardous:

Component	CAS-No	Weight % - Range
Ether salt	Proprietary	15 - 40
Propan-2-ol	67-63-0	5 - 10

4. FIRST AID MEASURES

Eye contact: Immediately flush eyes with water for 30 minutes while holding eyelids open. Call a physician immediately.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes. Seek medical attention if irritation occurs.

4. FIRST AID MEASURES

Ingestion: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Inhalation: Move to fresh air in case of accidental inhalation of vapors. In the case of inhalation of aerosol/mist consult a physician if necessary.

5. FIRE-FIGHTING MEASURES

Fire hazard: Combustible liquid.
Flash point: 40 °C / 104 °F
Method: Closed cup
Autoignition temperature: No data available.
Flammability limits in air:
Lower: No information available.
Upper: No information available.
Oxidizing properties: None.

Suitable extinguishing media:
Water Fog, Alcohol Foam, CO2, Dry Chemical.

Extinguishing media which must not be used for safety reasons:
High volume water jet.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases:
Thermal decomposition can lead to release of irritating gases and vapors.

Other information:
Solutions extremely slippery when spilled. Vapors may cause flash fire or explosion.

Specific methods:
In the event of fire, cool tanks with water spray

Special protective equipment for firefighters:
Wear protective fire fighting clothing and avoid breathing vapors. Wear self-contained breathing apparatus and protective suit.

NFPA rating:

Health:	**2**
Flammability:	**2**
Instability:	**0**
Special:	**None**

6. ACCIDENTAL RELEASE MEASURES

Main physical hazards: Combustible liquid.
Other hazards: Contaminated surfaces will be extremely slippery.
Personal precautions: Keep away from heat, sparks, and flame. Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist. Use personal protective equipment. Solutions extremely slippery when spilled.
Methods for cleaning up: Contain with dikes. Use explosion proof equipment to recover. Remove all sources of ignition. Soak up residual on inert absorbant (sand). Put in steel or plastic drum approved for flammables.
Environmental precautions: Do not allow material to contaminate ground water system. Prevent entry into sewage. Keep out of waterways.

7. HANDLING AND STORAGE

Handling:

Precautions: Avoid contact with eyes. Do not get on skin or clothing. Wash thoroughly after handling. Keep away from heat, sparks, and flame. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Vapors may cause flash fire or explosion. Wear suitable protective equipment. Storage temperature not to exceed 49 °C (120 °F).

Safe handling advice: Do not breathe vapors or spray mist. Keep airborne concentrations below exposure limits. Wash contaminated clothing before re-use. Wear suitable protective equipment.

Technical measures/ storage conditions: Do not store in contact with aluminum. Storage temperature not to exceed 49 °C (120 °F). Keep away from heat, sparks, and flame. Store out of direct sunlight in well ventilated area. Keep container closed when not in use. Use with adequate ventilation. Take precautionary measures against static discharges. Freezing will affect the physical condition but will not damage the material. Thaw and mix before using.

Packaging requirements: Steel or high density polyethylene (HDPE) container approved for flammables.

Incompatible products: Aluminium. Oxidizing agents. Reducing agents.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure: Control the source. Enclosure of the process. Local exhaust ventilation. Other suitable methods.

Hygiene measures: Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Keep airborne concentrations below exposure limits. Wear suitable protective equipment. Remove and wash contaminated clothing before re-use.

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Use NIOSH approved respirator with organic vapor protection (color coded black or yellow). Use SCBA (self contained breathing apparatus) in confined areas.

Eye protection: Tightly fitting safety goggles.

Hand protection: Impervious gloves made of:. PVC. Neoprene.

Skin and body protection: Chemical resistant apron. For spills and emergencies, also wear boots and impervious suit.

Occupational Exposure Limits

	ACGIH - TLVs			OSHA - PELs		
Component	**TWA / Ceiling**	**STEL**	**Skin**	**TWA / C**	**STEL**	**Final PELs - Skin**
Propan-2-ol	200 ppm TWA	400 ppm		400 ppm TWA 980 mg/m³ TWA		

Nuisance dust:
ACGIH: Guidelines - Inhalable particulate TLV-TWA=10 mg/m³; respirable particulate TLV-TWA= 3 mg/m³

9. PHYSICAL AND CHEMICAL PROPERTIES

Chemical characterization:	Organic surfactant blend.
Fire hazard:	Combustible liquid.
Form:	Liquid
Color:	Colorless - Clear pale yellow
Odor:	Alcohols
Odor threshold:	No information available.
pH:	7 - 9
pH concentration:	(10% solution)
Boiling point/range:	~ 72°C / 162 °F
Flash point:	40 °C / 104 °F
Method:	Closed cup.
Flammability limits in air:	
Lower:	No information available.
Upper:	No information available.
Bulk density:	Not applicable.
Melting point/range:	-10 °C / 14 °F
Decomposition temperature:	No data available.
Solubility:	
Water solubility:	Soluble.
Fat solubility:	No information available.
Partition coefficient (n-octanol/water):	No information available.
Relative density:	~ 1 (@ 25°C)
Vapor pressure:	~ 2.7 kPa (@ 50°C)
Vapor density:	No data available.
Viscosity:	No data available.
Evaporation rate:	No data available.
% Volatile:	> 40

10. STABILITY AND REACTIVITY

Stability:
Stable under recommended storage conditions

Conditions to avoid:
Keep away from heat and sources of ignition. Storage temperature not to exceed 49 °C (120 °F). Take precautionary measures against static discharges.

Incompatibility with other substances:
Aluminum. Oxidizers. Reducing Agents.

Hazardous decomposition products:
When heated strongly or burned, oxides of carbon, sulfur oxides and harmful organic chemical fumes are released.

Hazardous polymerization:
Hazardous polymerization does not occur.

Other hazards:
Contaminated surfaces will be extremely slippery.

11. TOXICOLOGICAL INFORMATION

PRODUCT TOXICOLOGICAL INFORMATION

No toxicology studies have been conducted on this product. Hazard classification is estimated based on available component information.

Acute Health Hazard

Eye contact: Severe eye irritation. Causes pain and redness. Prolonged or repeated contact may cause mild burn.
Skin contact: Severe skin irritation. Prolonged or repeated exposure may damage skin.
Ingestion: Ingestion of a large amount of this product may result in CNS effects. Ingestion of large amounts may cause nausea, vomiting, diarrhea.
Inhalation: May be harmful by inhalation (after often repeated exposure).
Sensitization - lung: Not known to cause allergic reaction.
Sensitization - skin: Not known to cause allergic reaction.

Chronic Health Hazard

Carcinogenic effects: None known.
Mutagenic effects: See COMPONENT TOXICOLOGICAL INFORMATION below.
Teratogenic effects: See COMPONENT TOXICOLOGICAL INFORMATION below.
Reproductive toxicity: See COMPONENT TOXICOLOGICAL INFORMATION below.
Target organ effects: See COMPONENT TOXICOLOGICAL INFORMATION below.

COMPONENT TOXICOLOGICAL INFORMATION

Component	Target Organ Effects	LD50 / LC50
Ether salt		= 7.3ml/kg (Oral LD50; Rat)
Propan-2-ol	eyes, skin, respiratory system	= 12800 mg/kg (Dermal LD50; Rabbit) = 16000 mg/kg (Inhalation LC50; Rat) 8hr = 3600 mg/kg (Oral LD50; Mouse) = 5045 mg/kg (Oral LD50; Rat)

Component	IARC:	ACGIH - Carcinogens:	OSHA Regulated Carcinogens	NTP:
Propan-2-ol		A4 - Not Classifiable as a Human Carcinogen		

Component	OTHER TOXICOLOGICAL INFORMATION
Ether salt	Severe eye irritation. Severe skin irritation.
Propan-2-ol	Causes eye irritation. Inhalation of this chemical have been show n to produce effects on central nervous and lungs in laboratory animals. Ingestion produces central nervous system effects such as dizziness, drow siness, narcosis, unconsciousness, hypertension, respiratory and cardiac depression, in humans. Oral and inhalation controlled exposure produced fetotoxic effects in laboratory animals. Can be aspired into lungs during ingestion or vomiting. Aspiration can cause potentially fatal injury to the lungs. Exposure to vapors produced kidney and testicular effects in experimental animals.

12. ECOLOGICAL INFORMATION

PRODUCT INFORMATION

Main environmental hazards:
Harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

COMPONENT INFORMATION

Propan-2-ol

Bioaccumulation:	Does not bioaccumulate
Persistence / degradability:	Readily biodegradable.
Freshwater Algae Data	> 1000 mg/L (EC50; Scenedesmus subspicatus)
Freshwater Fish Species Data	= 61200 mg/L (LC50; Pimephales promelas) = 94900 mg/L (LC50; Pimephales promelas) = 9640 mg/L (LC50; Pimephales promelas)
Water Flea Data	= 13299 mg/L (EC50; Daphnia magna)

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Dispose of in accordance with local regulations.

Contaminated packaging:
Triple rinse, crush and ship to sanitary landfill unless prohibited by local regulations. If reusable containers are used, send them back to the product supplier, after the required rinsing.

EPA RCRA Hazardous Waste Code:
D001

14. TRANSPORT INFORMATION

DOT:

UN/NA Number:	UN 1993
CERCLA RQ:	Not established
Hazard class:	3
Proper shipping name:	Flammable liquid, n.o.s. (contains isopropanol), 3, UN 1993, PG III
Label(s):	Flammable Liquid 3

IMDG/IMO

Shipping name:	FLAMMABLE LIQUID, N.O.S. (isopropanol)
Label(s):	Flammable Liquid 3
Class or Div.:	3
UN number:	UN 1993
Packing group:	III
EMS:	F-E, S-E

ICAO/IATA

Shipping name:	Flammable liquid, n.o.s. (contains isopropanol)
Label(s):	Flammable Liquid 3
Class or Div.:	3
UN number:	UN 1993
Packing group:	III

14. TRANSPORT INFORMATION

Packing instruction (passenger aircraft):	309	**Max Net Qty/Pkg:** 60 L
Packing instruction (cargo aircraft):	310	**Max Net Qty/Pkg:** 220 L

TDG (Canada):

Shipping name:	FLAMMABLE LIQUID, N.O.S. (contains isopropanol), 3, UN 1993, PG III
Label(s):	Flammable Liquid 3
PIN:	UN 1993
Class:	3
Packing group:	III

Note 1:
For the applicable placard selection refer to the appropriate transport regulations; the selection may vary depending on the cargo size and categories of other hazardous materials in the cargo.

15. REGULATORY INFORMATION

International Chemical Inventories

Inventory - United States TSCA -	This product complies with TSCA requirements.
Canada DSL Inventory List -	This product complies with DSL requirements.
EC-No	This product complies with EINECS/ELINCS requirements.
China inventory of existing chemical substances list -	This product complies with China inventory requirements.
Inventory - Japan - Existing and New Chemicals list -	This product does not comply with JPENCS
Australia (AICS):	All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

U.S.A. Regulations

OSHA Hazard Communication Standard:
(Complies with USA OSHA 29 CFR 1910.1200 and ANSI Z 400.1)

EPA RCRA Hazardous Waste Code:
D001

EPA, Sections 311 and 312 - Material Safety Data Sheet Requirements (40 CFR 370):

Immediate (Acute) Health Hazard:	YES
Delayed (Chronic) Health Hazard:	None
Fire Hazard:	YES
Sudden Release or Pressure Hazard:	None
Reactive Hazard:	None

EPA, Sections 313 - List of Toxic Chemicals (40 CFR 372):
This product contains the following substance(s), which appear(s) on the List of Toxic Chemicals:

Additional Regulatory Information

Ether salt
EPA, CERCLA Section 102a/103 Hazardous Substances (40 CFR 302.4): None
CERCLA/SARA - Hazardous Substances and their RQs: None
EPA, SARA TITLE III Section 304, Extremely Hazardous Substances (40 CFR 355.40): None
California Proposition 65: None

Propan-2-ol
EPA, CERCLA Section 102a/103 Hazardous Substances (40 CFR 302.4): Listed
CERCLA/SARA - Hazardous Substances and their RQs: None

Ether salt

EPA, SARA TITLE III Section 304, Extremely Hazardous Substances (40 CFR 355.40): None
California Proposition 65: None

International Hazard Class

WHMIS Hazard Class:
B3 (Combustible Liquids)
D2B (Other Toxic Effects - Toxic Material)

16. OTHER INFORMATION

Current references:

1. Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. *American Conference of Governmental Industrial Hygienists, Cincinnati OH.*
2. IARC Monograms on the Evaluation of the Carcinogenic Risk of Chemicals to Man. *World Health Organization, International Agency for Research on Cancer. Geneva, Switzerland.*
3. Annual Report on Carcinogens. National Toxicology Program. *U.S. Department of Heath and Human Services, Public Health Service.*
4. NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). *National Institute for Occupational safety and Health. Cincinnati, OH.*
5. LOLI Database.

Explanation of terms:

ACGIH:	American Conference of Governmental Industrial Hygienist
ACGIH-TL:	Threshold Limit Value
DSL:	Domestic Substance List
HMIRC:	Hazardous Materials Information Review Commission
IARC:	International Agency for Research on Cancer
NTP:	National Toxicology Program
NIOSH:	National Institute of Occupational Safety & Health
NIOSH-REL:	Recommended Exposure Limit
OSHA:	Occupational Safety & Health Administration
OSHA-PEL:	Permissible Exposure Limit
TSCA:	Toxic Substance Control Act (Inventory)

Occupational Exposure Limits indicators: TWA - Time Weighted Average; STEL - Short Term Limit; C - Ceiling Limit;units: [mg/m^3]

ACGIH Notations:
"Skin" refers to the potential significant contribution to the overall exposure by the cutaneous route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance.
"A" notation indicates carcinogenicity as follows:
ACGIH classification: A1 - Confirmed Human Carcinogen; A2 - Suspected Human Carcinogen; A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans; A4 - Not Classifiable as a Human Carcinogen; A5 - Not suspected as a Human Carcinogen.
"SEN" refers to the potential for an agent to product sensitization as confirmed by human and animal data.

Section(s) revised: 4, 11

Additional advice: Consult your supplier if the material is to be used for special applications such as in the food industry or for hygiene, medical or surgical end-use.

Prepared by: Well Services Safety & Environment (WSSE)

Revision date: 23 May 2008

The information and recommendations contained herein are based upon tests believed to be reliable. However, Schlumberger does not guarantee their accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage may be required. Schlumberger assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of the Material Safety Data Sheet