SAFETY DATA SHEET

Version 1.1 Revision Date 2011-12-28

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

Product information

Trade name : AF-10 Surfactant
Material :

Use : Oil Well Cement Spacer Fluid

Company :
Downhole Solutions
81694 Hwy 21
Bush, La 70431

Emergency telephone: (985) 774-3836

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
North America: CHEMTREC 800.424.9300 or 703.527.3887
Asia: +800 CHEMCALL (+800 2436 2255) China: 0532.8388.9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Chemcare Asia: Tel: +65 6848 9048 - Mob: +65 8382 9188 - Fax: +65 6848
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
E-mail address : burt@downholesolutions.net
Website : downholesolutions.net

2. HAZARDS IDENTIFICATION

Emergency Overview

Form: Liquid **Physical state**: Liquid **Color**: Clear to amber **Odor**: Mild

OSHA Hazards : Irritant, Harmful by ingestion.

GHS Classification

: Acute toxicity, Category 5, Oral
Skin irritation, Category 2
Eye irritation, Category 2A
Aspiration hazard, Category 2
Acute aquatic toxicity, Category 3

GHS-Labeling

Symbol(s) :

Signal Word : Warning

Hazard Statements : H303: May be harmful if swallowed.
H305: May be harmful if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H402: Harmful to aquatic life.

Precautionary Statements : **Prevention:**
P264: Wash skin thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/ eye protection/ face protection.
Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331: Do NOT induce vomiting.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312: Call a POISON CENTER or doctor/ physician if you feel unwell.
Storage:
P405: Store locked up.
Disposal:
P501: Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Not Established

Molecular formula : Mixture

Component	CAS-No.	Weight %
Poly(oxy-1,2-ethanediyl)-α-[3,5-dimethyl-1-(2-methylpropyl)hexyl]-ω-hydroxy-	60828-78-6	30 - 60
D-Glucopyranose, Oligomeric, Decyl Octyl Glycoside	68515-73-1	30 - 60
1-Octanol	111-87-5	1 - 5
1-Decanol	112-30-1	1 - 5

4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.
If inhaled	:	If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. If symptoms persist, call a physician.

5. FIRE-FIGHTING MEASURES

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters	:	Wear self contained breathing apparatus for fire fighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Fire and explosion protection	:	Normal measures for preventive fire protection.
Hazardous decomposition products	:	Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation.

Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Advice on safe handling	:	Do not breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

US

Ingredients	Basis	Value	Control parameters	Note
Polyethylene Glycol	US WEEL	TWA	10 mg/m3	
1-Octanol	US WEEL	TWA	50 ppm,	

Engineering measures

Adequate ventilation to control airborned concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Air-Purifying Respirator for Dusts and Mists / P100.

		Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Form	:	Liquid
Physical state	:	Liquid
Color	:	Clear to amber
Odor	:	Mild

Safety data

Flash point	:	Not applicable
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Oxidizing properties	:	No
Autoignition temperature	:	No data available
Molecular formula	:	Mixture
Molecular Weight	:	Not applicable
pH	:	No data available
	:	No data available
Boiling point/boiling range	:	102 °C (216 °F) estimated
Vapor pressure	:	15.00 MMHG

		at 20 °C (68 °F)
Relative density	:	1.087, 25 °C(77 °F)
Water solubility	:	Partly soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Relative vapor density	:	No data available
Evaporation rate	:	No data available
Percent volatile	:	> 99 %

10. STABILITY AND REACTIVITY

Chemical stability	:	This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Conditions to avoid	:	Heat, sparks, fire, and oxidizing agents.
Other data	:	No decomposition if stored and applied as directed.

11. TOXICOLOGICAL INFORMATION

Diacel® SF-1 Surfactant **Acute oral toxicity**	:	LD50: 3.26 g/kg Species: rat
Diacel® SF-1 Surfactant **Acute inhalation toxicity**	:	LC50: > 20 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Acute toxicity estimate
Diacel® SF-1 Surfactant **Acute dermal toxicity**	:	LD50: 8.48 ML/KG Species: rabbit
Diacel® SF-1 Surfactant **Skin irritation**	:	May irritate skin.
Diacel® SF-1 Surfactant **Eye irritation**	:	May irritate eyes.

Diacel® SF-1 Surfactant
Aspiration toxicity : May be harmful if swallowed and enters airways.
Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

Diacel® SF-1 Surfactant
Further information : Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish : LC50: 39 mg/l
Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates. : EC50: 81.2 mg/l
Species: Daphnia magna (Water flea)

Toxicity to bacteria : IC50: > 1,000 mg/l

Elimination information (persistence and degradability)

Biodegradability : Expected to be biodegradable

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

The information in this MSDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product.
Do not re-use empty containers.

14. TRANSPORT INFORMATION

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous

Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

US DOT (United States Department of Transportation)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (International Maritime Dangerous Goods)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (International Air Transport Association)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (Agreement on Dangerous Goods by Road (Europe))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (Regulations concerning the International Transport of Dangerous Goods (Europe))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. REGULATORY INFORMATION

National legislation

SARA 311/312 Hazards	:	No SARA Hazards
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.
SARA 313 Ingredients	:	SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential	:	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):	:	Ethylene Glycol
The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):	:	Polyethylene Glycol 1-Decanol Ethylene Glycol

US State Regulations

Pennsylvania Right To Know

:	1-Octanol	111-87-5
:	1-Decanol	112-30-1
:	Ethylene Glycol	107-21-1

New Jersey Right To Know

: No components are subject to the New Jersey Right to Know Act.

California Prop. 65 Ingredients	:	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

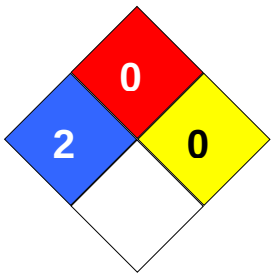
Notification status

Europe REACH	:	Not in compliance with the inventory
United States of America US.TSCA	:	On TSCA Inventory
Canada DSL	:	All components of this product are on the Canadian DSL list.
Australia AICS	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	On the inventory, or in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory

Korea KECI	:	On the inventory, or in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

NFPA Classification : Health Hazard: 2
Fire Hazard: 0
Reactivity Hazard: 0



Further information

Legacy MSDS Number : CPC00412

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this MSDS pertains only to the product as shipped.

The information provided in this Material Safety Data Sheet 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.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philipines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit

IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Compositon, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		