

# SAFETY DATA SHEET

## 1-1-100 EXP

Version 1.5

Revision Date 2017-01-13

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### Product information

Product Name : FL-05 Dry Fluid Loss

Use : Cement Additive

Company : Downhole Solutions  
81694 Hwy 41  
Bush, La 70431

#### Emergency telephone:

##### Health:

866.442.9628 (North America)

1.832.813.4984 (International)

##### Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

### SECTION 2: Hazards identification

#### Classification of the substance or mixture

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

#### Classification

:

Not a hazardous substance or mixture.

#### Labeling

Not a hazardous substance or mixture.

**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.

**SECTION 3: Composition/information on ingredients**

Synonyms : FL

Molecular formula : Mixture

Component	CAS-No.	Weight %
Potassium Chloride	7447-40-7	40 - 70

**SECTION 4: First aid measures**

General advice : Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**SECTION 5: Firefighting measures**

Flash point : Not applicable

Autoignition temperature : Not applicable

Unsuitable extinguishing media : High volume water jet.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the

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- surrounding environment.
- Fire and explosion protection : Provide appropriate exhaust ventilation at places where dust is formed.
- Hazardous decomposition products : No data available.

**SECTION 6: Accidental release measures**

- Personal precautions : Avoid dust formation. Avoid breathing dust.
- Environmental precautions : 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 : Keep in suitable, closed containers for disposal.
- Additional advice : Contaminated surfaces will be extremely slippery. Avoid spillage on floor as the product can become very slippery when wet. Sweep up to prevent slipping hazard.

**SECTION 7: Handling and storage****Handling**

- Advice on safe handling : For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.

**Storage**

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8: Exposure controls/personal protection****Engineering measures**

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 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. 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:.

- 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. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Lightweight protective clothing. 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.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

#### Appearance

- Form : Powder  
 Physical state : Solid  
 Color : White to off-white

#### Safety data

- Flash point : Not applicable
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Oxidizing properties : no
- Autoignition temperature : Not applicable
- Molecular formula : Mixture
- Molecular weight : Not applicable
- pH : No data available
- Freezing point : Not applicable
- Boiling point/boiling range : Not applicable

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Vapor pressure	: Not applicable
Relative density	: 0.8
Water solubility	: Soluble
Viscosity, kinematic	: No data available
Relative vapor density	: No data available

**SECTION 10: Stability and reactivity****Possibility of hazardous reactions**

Conditions to avoid	: Heat, sparks, fire, and oxidizing agents.
Hazardous decomposition products	: No data available

Other data	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
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Keep in a dry place.  
No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information****Diacel® FL Polymer  
Acute oral toxicity**

: Acute toxicity estimate: 4,314 mg/kg  
Method: Calculation method

Acute toxicity estimate: 4,314 mg/kg  
Method: Calculation method

**Eye irritation**

Potassium Chloride : Causes mild skin and eye irritation

**Further information**

Potassium Chloride : No data available.

**SECTION 12: Ecological information****Toxicity to fish**

Potassium Chloride : LC50: 880 mg/l  
Exposure time: 96 h  
Species: Pimephales promelas (fathead minnow)

**Toxicity to daphnia and other aquatic invertebrates**

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Potassium Chloride : LC50: 660 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
static test

Elimination information (persistence and degradability)

Biodegradability : This material is not expected to be readily biodegradable.

#### Ecotoxicology Assessment

Additional ecological information : This material is not expected to be harmful to aquatic organisms.

### SECTION 13: Disposal considerations

The information in this SDS 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 : Do not dispose of waste into sewer. 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.

### SECTION 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 SDS 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

**SECTION 15: Regulatory information****National legislation**

**SARA 311/312 Hazards** : No SARA Hazards

**EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW**

**SARA 302 Threshold Planning Quantity** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Ingredients** : 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).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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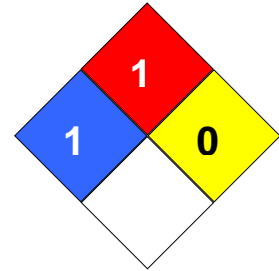
California Prop. 65 Ingredients : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**Notification status**

Europe REACH : On the inventory, or in compliance with the inventory  
 United States of America (USA) TSCA : On the inventory, or in compliance with the inventory  
 Canada DSL : On the inventory, or in compliance with the inventory  
 Australia AICS : On the inventory, or in compliance with the inventory  
 New Zealand NZIoC : Not in compliance with the inventory  
 Japan ENCS : Not in compliance with the inventory  
 Korea KECI : Not 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

**SECTION 16: Other information**

**NFPA Classification** : Health Hazard: 1  
 Fire Hazard: 1  
 Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 283670

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

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

The information provided in this 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



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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	Philippines 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 Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

SAFETY DATA SHEET

# 1-1-100 EXP

Version 2.2

Revision Date 2016-05-20

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product information

Product Name : DS-20 Dry

Use : Cement Additive, Dispersant

Company : Downhole Solutions  
81694 Hwy 41  
Bush, La 70431

### Emergency telephone:

#### Health:

866.442.9628 (North America)

1.832.813.4984 (International)

#### Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: +800 CHEMCALL (+800 2436 2255) China:+86-21-22157316

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

## SECTION 2: Hazards identification

### Classification of the substance or mixture

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

### Emergency Overview

#### Warning

**Form:** Powder    **Physical state:** Solid    **Color:** Light brown    **Odor:** Mild, earthy

OSHA Hazards : Combustible dust

### Classification

: Combustible dust

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**Labeling**

Signal Word : Warning

Hazard Statements : May form combustible dust concentrations in air.

**Potential Health Effects**

Physical Hazards : Mechanical processing may form combustible dust concentrations in air and thermal processing at elevated temperatures may generate simple hydrocarbons and carbon oxides.

**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.

**SECTION 3: Composition/information on ingredients**

Synonyms : None Established

Component	CAS-No.	Weight %
Sodium Salt of Poly-Naphthalene Sulfonic Acid	36290-04-7	97 - 100

**SECTION 4: First aid measures**

General advice : No hazards which require special first aid measures.

If inhaled : If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of eye contact : Flush eyes with water as a precaution. 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. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

**SECTION 5: Firefighting measures**

Flash point	:	Not applicable
Autoignition temperature	:	No data available
Unsuitable extinguishing media	:	High volume water jet.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire and explosion protection	:	Provide appropriate exhaust ventilation at places where dust is formed.
Hazardous decomposition products	:	Carbon oxides. Sulfur oxides.

**SECTION 6: Accidental release measures**

Personal precautions	:	Avoid dust formation. Avoid breathing dust.
Environmental precautions	:	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	:	Keep in suitable, closed containers for disposal.

**SECTION 7: Handling and storage****Handling**

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Advice on protection against fire and explosion	:	Provide appropriate exhaust ventilation at places where dust is formed.

**Storage**

Requirements for storage areas and containers	:	Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.
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**SECTION 8: Exposure controls/personal protection****Ingredients with workplace control parameters****US**

Ingredients	Basis	Value	Control parameters	Note
Formaldehyde	ACGIH	C	0.3 ppm,	A2, SEN,
	OSHA 29 CFR 1910.1048(c)	TWA	0.75 ppm,	
	OSHA 29 CFR 1910.1048(c)	STEL	2 ppm,	
Naphthalene	ACGIH	TWA	10 ppm,	hematologic eff, URT irr, eye irr, eye dam, (), A4, Skin,
	ACGIH	STEL	15 ppm,	hematologic eff, URT irr, eye irr, eye dam, (), A4, Skin,
	OSHA Z-1	TWA	10 ppm, 50 mg/m3	(b),
	OSHA Z-1-A	TWA	10 ppm, 50 mg/m3	
	OSHA Z-1-A	STEL	15 ppm, 75 mg/m3	

- (i) Adopted values or notations enclosed are those for which changes are proposed in the NIC  
 (b) The value in mg/m3 is approximate.  
 A2 Suspected human carcinogen  
 A4 Not classifiable as a human carcinogen  
 eye dam Eye damage  
 eye irr Eye irritation  
 hematologic eff Hematologic effects  
 SEN Sensitizer  
 Skin Danger of cutaneous absorption  
 URT irr Upper Respiratory Tract irritation

**Engineering measures**

Adequate ventilation to control airborne 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. Safety glasses.

Skin and body protection : Wear as appropriate:. Choose body protection according to

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the amount and concentration of the dangerous substance at the work place. 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.

**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

Form : Powder  
Physical state : Solid  
Color : Light brown  
Odor : Mild, earthy

**Safety data**

Flash point : Not applicable

Lower explosion limit : No data available

Upper explosion limit : No data available

Oxidizing properties : no

Autoignition temperature : No data available

Molecular weight : No data available

pH : 8

Pour point : Not applicable

Boiling point/boiling range : Not applicable

Vapor pressure : Not applicable

Relative density : 1.36  
at 15.6 °C (60.1 °F)

Water solubility : Soluble

Partition coefficient: n-octanol/water : No data available

Viscosity, kinematic : No data available

Evaporation rate : No data available

**SECTION 10: Stability and reactivity**

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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 : Generation of Dusts.

Materials to avoid : Avoid contact with strong oxidizing agents.

Hazardous decomposition products : Carbon oxides  
Sulfur oxides

Other data : No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information**

**Acute oral toxicity**

Sodium Salt of Poly-Naphthalene Sulfonic Acid : LD50: >2000 milligram per kilogram  
Species: Rat

**Acute inhalation toxicity**

Sodium Salt of Poly-Naphthalene Sulfonic Acid : LC50: not known

**Acute dermal toxicity**

Sodium Salt of Poly-Naphthalene Sulfonic Acid : LD50: PNT

**Skin irritation**

Sodium Salt of Poly-Naphthalene Sulfonic Acid : No skin irritation

**Eye irritation**

Sodium Salt of Poly-Naphthalene Sulfonic Acid : No eye irritation

**DIACEL® RPM Powder**

**Aspiration toxicity** : No aspiration toxicity classification.

**DIACEL® RPM Powder**

**Further information** : No data available.

**SECTION 12: Ecological information**

Elimination information (persistence and degradability)

Biodegradability : This material is not expected to be readily biodegradable.

**Ecotoxicology Assessment**

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Additional ecological information : No data available

**SECTION 13: Disposal considerations**

The information in this SDS 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 : Do not dispose of waste into sewer. 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.

**SECTION 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 SDS 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.



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**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

### SECTION 15: Regulatory information

#### National legislation

**SARA 311/312 Hazards** : Fire Hazard

#### EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

**SARA 302 Threshold Planning Quantity** : The following components are subject to reporting levels established by SARA Title III, Section 302:

<b>SARA 304 Reportable Quantity</b>	: This material does not contain any components with a section 304 EHS RQ.
	Formaldehyde 50-00-0 500 lbs

**SARA 313 Ingredients** : 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):  
 : Quinoline - 91-22-5

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

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**US State Regulations**

## Pennsylvania Right To Know

: Sodium Sulfate - 7757-82-6  
 Formaldehyde - 50-00-0  
 Quinoline - 91-22-5  
 Naphthalene - 91-20-3

## New Jersey Right To Know

: Sodium Sulfate - 7757-82-6  
 Quinoline - 91-22-5

California Prop. 65  
Ingredients

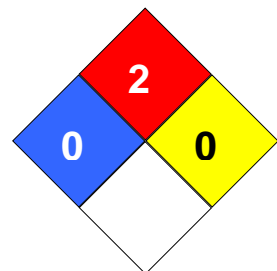
: WARNING! This product contains a chemical known in the  
 State of California to cause cancer.

**Notification status**

Europe REACH : On the inventory, or in compliance with the inventory  
 United States of America TSCA : On TSCA Inventory  
 Canada DSL : All components of this product are on the Canadian  
 DSL  
 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

**SECTION 16: Other information****NFPA Classification**

: Health Hazard: 0  
 Fire Hazard: 2  
 Reactivity Hazard: 0

**Further information**

Legacy SDS Number : 678430

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

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

The information provided in this 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	Philippines 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 Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

# SAFETY DATA SHEET

PRODUCT

## 1-1-100 EXP

EMERGENCY TELEPHONE NUMBER(S)

(800)463-3216 (24 Hours)

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Expanding Agent

APPLICATION : CEMENTING ADDITIVE

SUPPLIER IDENTIFICATION : Downhole Solutions  
81694 Hwy 21  
Bush, La 70431

EMERGENCY TELEPHONE NUMBER(S) : (800)463-3216 (24 Hours)  
For Transportation Emergencies call CANUTEC 613-996-6666  
(24 hours)

NFPA 704M/HMIS RATING

HEALTH : 2 / 2 FLAMMABILITY : 0 / 0 INSTABILITY : 0 / 0 OTHER :  
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme \* = Chronic Health Hazard

Prepared By : SHE Department; (905) 632-8791

Date issued : 2012/12/10

Version Number : 1.1

### 2. HAZARDS IDENTIFICATION

#### \*\*EMERGENCY OVERVIEW\*\*

#### WARNING

Irritating to eyes and skin.

Do not get in eyes, on skin, on clothing. Do not take internally. Do not breathe dust. Wear suitable protective clothing. 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 water. Use a mild soap if available.

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

Not flammable or combustible.

PRIMARY ROUTES OF EXPOSURE :

Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :

Can cause moderate to severe irritation.

SKIN CONTACT :

Can cause moderate irritation.

INGESTION :

Not a likely route of exposure. There may be irritation to the gastro-intestinal tract with nausea and vomiting.

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## INHALATION :

Repeated or prolonged exposure may irritate the respiratory tract.

## 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 :

No adverse effects expected other than those mentioned above.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Refer to Section 15 for more information.

Hazardous Substance(s)	CAS NO	% (w/w)	LD50's and LC50's Route & Species
Calcium Magnesium Oxide	37247-91-9	60.0 - 100.0	No data available.

## 4. FIRST AID MEASURES

### EYE CONTACT :

Immediately flush with plenty of water for at least 20 minutes or until the material is removed. If only one eye is affected be sure to use care not to contaminate the other eye with the run-off. Get medical attention.

### SKIN CONTACT :

Immediately flush with plenty of water for at least 20 minutes or until the material is removed. Contaminated clothing, including shoes and leather goods, should be removed under running water. Get medical attention.

### INGESTION :

Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If symptoms develop, seek medical advice.

### 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 : None  
LOWER EXPLOSION LIMIT : Not flammable  
UPPER EXPLOSION LIMIT : Not flammable

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AUTOIGNITION TEMPERATURE : Not flammable

EXTINGUISHING MEDIA :

Not expected to burn. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :

Not flammable or combustible.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :

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

SENSITIVITY TO MECHANICAL IMPACT :

Not expected to be sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE :

Not expected to be sensitive to static discharge.

## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :

Notify appropriate government, occupational health and safety and environmental authorities. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

METHODS FOR CLEANING UP :

Sweep up and shovel. Reclaim into recovery or salvage drums. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :

Do not contaminate surface water.

## 7. HANDLING AND STORAGE

HANDLING :

Do not take internally. Ensure all containers are labeled. Avoid eye and skin contact. Avoid generating dusts.

STORAGE CONDITIONS :

Store separately from oxidizers. Keep in dry place.

## 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.

Substance(s)	Basis	ppm	mg/m3	Non-Standard Unit
Respirable Nuisance Particulates (total dust)	OSHA Z1/TWA		15	
Respirable Nuisance Particulates (respirable fraction)	OSHA Z1/TWA		5	
Respirable Nuisance Particulates (Inhalable fraction)	ACGIH/TWA		10	

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Respirable Nuisance Particulates (Respirable fraction)	ACGIH/TWA	3
Inhalable (Total) Nuisance Particulates (total dust)	OSHA Z1/TWA	15
Inhalable (Total) Nuisance Particulates (respirable fraction)	OSHA Z1/TWA	5
Inhalable (Total) Nuisance Particulates (Inhalable fraction)	ACGIH/TWA	10
Inhalable (Total) Nuisance Particulates (Respirable fraction)	ACGIH/TWA	3

\* A skin notation refers to the potential significant contribution to overall exposure by the cutaneous route, including mucous membranes and the eyes.

## ENGINEERING MEASURES :

General ventilation is recommended. Local exhaust ventilation may be necessary when dusts or mists are generated.

## RESPIRATORY PROTECTION :

Respiratory protection is not normally needed. If dusts are generated, use an approved air-purifying respirator. A particulate cartridge may be used.

## HAND PROTECTION :

When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled, but we have positive experience under light handling conditions using gloves made from NEOPRENE, NITRILE, NATURAL RUBBER OR PVC GLOVES. Gloves should be replaced immediately if signs of degradation are observed. Breakthrough time not determined as preparation, consult PPE manufacturers.

## SKIN PROTECTION :

Wear standard protective clothing.

## EYE PROTECTION :

Wear safety glasses with side-shields.

## 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Powder
APPEARANCE	Tan
ODOR	None
ODOR THRESHOLD	No data available.
SPECIFIC GRAVITY	3.35
SOLUBILITY IN WATER	Complete
pH	No data available.
FREEZING POINT	No data available.
BOILING POINT	No data available.
VAPOR PRESSURE	No data available.
EVAPORATION RATE	No data available.

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VAPOR DENSITY No data available.  
COEFFICIENT OF WATER/OIL No data available.  
DISTRIBUTION

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 :  
Moisture

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 :  
None known

### 11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :  
This product is not expected to be a sensitizer.

CARCINOGENICITY :  
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

REPRODUCTIVE EFFECTS :  
No quantitative data available.

TERATOGENICITY AND EMBRYOTOXICITY :  
No quantitative data available.

MUTAGENICITY :  
No quantitative data available.

OTHER TOXICITY INFORMATION :  
Toxicologically Synergistic Products: None known



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### HUMAN HAZARD CHARACTERIZATION :

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

## 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	Water	Soil/Sediment
<5%	< 5%	<5%

The portion in water is expected to float on the surface.

### BIOACCUMULATION POTENTIAL

This preparation or material is not expected to bioaccumulate.

### ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION

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

## 13. DISPOSAL CONSIDERATIONS

In Ontario, the waste class under Regulation 347 is: 148

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.

## 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.

### TRANSPORTATION OF DANGEROUS GOODS (TDG) CLASSIFICATION:

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

For Transportation Emergencies call CANUTEC 613-996-6666 (24 hours)

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### 15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

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 :

D2B - Materials Causing Other Toxic Effects - Toxic Material

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :

The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

NATIONAL POLLUTANT RELEASE INVENTORY (NPRI) :

This product does not contain any substances listed in Part 1A (Core Substances) of the NPRI at a concentration of one percent or more by weight. For a complete NPRI listing (Parts 1 - 5) please consult Environment Canada's NPRI web site.

NATIONAL REGULATIONS, USA :

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

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

### 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.