SAFETY DATA SHEET



Greenbase[™] Flowzan® Biopolymer

Version 1.10

Revision Date 2023-10-05

SECTION 1: Identification of the substance/mixture and of the company/undertaking **Product information** Product Name : Greenbase[™] Flowzan® Biopolymer Material : 1095064, 1101166, 1077462 Company : Chevron Phillips Chemical Company LP **Drilling Specialties Company LLC** 10001 Six Pines Drive The Woodlands, TX 77380 **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: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090 Mexico CHEMTREC 01-800-681-9531 (24 hours) South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600 Argentina: +(54)-1159839431 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week) Belgium: 070 245 245 (24 hours/day, 7 days/week) Bulgaria: +359 2 9154 233 Croatia: +3851 2348 342 (24 hours/day, 7 days/week) Cyprus: 1401 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402 Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Finland: 0800 147 111 09 471 977 (24 hours/day) France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week) Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Greece: (0030) 2107793777 (24 hours/day, 7 days/week) Hungary: +36-80-201-199 (24 hours/day, 7 days/week) Iceland: 543 2222 (24 hours/day, 7 days/week) Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.) Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Lithuania: +370 (85) 2362052 SDS Number:10000063660 1/14

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Malta: +356 2395 2000 The Netherlands: NVIC: Norway: 22 59 13 00 (24 Poland: BIG +32.14.5845 Portugal: CIAV phone nu Romania: +40213183606 Slovakia: +421 2 5477 4 Slovenia: Phone number	hours/day, 7 days/week) 545 (phone) or +32.14583516 (telefax) imber: +351 800 250 250 5 166 : 112 ncy Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24
Responsible Department E-mail address Website	 Product Safety and Toxicology Group SDS@CPChem.com www.CPChem.com
CTION 2: Hazards identifica	tion
	tance or mixture ified in accordance with the hazard communication standard 29 CFR bels contain all the information as required by the standard. : Eye irritation, Category 2A
Labeling Symbol(s)	:
Signal Word	: Warning
Hazard Statements	: H319: Causes serious eye irritation.
Precautionary Statements	 Prevention: P264 Wash skin thoroughly after handling. P280 Wear eye protection/ face protection. Response: P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 If eye irritation persists: Get medical advice/
	attention.
Carcinogenicity:	• •
Carcinogenicity: IARC NTP	• •

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Synonyms	:)	Kanthai	n Gum Suspension	
Molecular formula		Vixture		
Component Di(Ethylene Glycol) Butyl Eth	or		CAS-No. 112-34-5	Weight % 55 - 65
Saturated monocarboxylic ac salt		alcium	Proprietary	0.6 - 1
TION 4: First aid measures				
General advice			ut of dangerous are	ea. Show this material safety data
If inhaled				covery position and seek medical st, call a physician.
In case of eye contact	ŀ	enses.	Protect unharmed	rith plenty of water. Remove contact eye. Keep eye wide open while sists, consult a specialist.
If swallowed				r. Never give anything by mouth to symptoms persist, call a physician.
TION 5: Firefighting measu	res			
Flash point			(212°F) : Tag closed cup	
Autoignition temperature	: N	No data	available	
Unsuitable extinguishing media	: H	-ligh vo	lume water jet.	
Specific hazards during fire fighting	r	neasur		emical fires. Use extinguishing iate to local circumstances and the
Special protective equipment for fire-fighters		Near se		ning apparatus for firefighting if
Further information	r	neasur		emical fires. Use extinguishing iate to local circumstances and the
		Normal	measures for prev	entive fire protection.
Fire and explosion protection	. 1			

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products

SECTION 6: Accidental release measures			
Personal precautions	:	Use personal protective equipment.	
Environmental precautions	:	Prevent further leakage or spillage if safe to do so.	
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.	
SECTION 7: Handling and stora	ge		
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. 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. Electrical installations / working materials must comply with the technological safety standards.	
SECTION 8: Exposure controls/	per	sonal protection	

Ingredients with workplace control parameters

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05				
Components	Basis	Value	Control parameters	Note
Di(Ethylene Glycol) Butyl Ether	ACGIH	TWA	10 ppm,	Inhalable fraction and vapor
Saturated monocarboxylic acid, calcium salt	ACGIH	TWA	10 mg/m3	A4, Inhalable particulate matter
	ACGIH	TWA	3 mg/m3	A4, Respirable particulate matter

A4 Not classifiable as a human carcinogen

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

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Respiratory protection	: If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, 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. 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:. 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.
TION 9: Physical and cher	nical properties
Information on basic phys	sical and chemical properties
Appearance	
Physical state Color Odor	: liquid : Yellow : Mild
Safety data	
Flash point	: 100°C (212°F) Method: Tag closed cup
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

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Freezing point	: Not applicable
Boiling point/boiling range	: 230°C (446°F)
Vapor pressure	: 14.70 PSI at 21°C (70°F)
Relative density	: 1.1
Density	: 1.102 g/l
Water solubility	: soluble
Viscosity, kinematic	: No data available
Relative vapor density	: No data available
TION 10: Stability and reactiv	vity
Reactivity	: Stable at normal ambient temperature and pressure.
Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Possibility of hazardous rea	ctions
Hazardous reactions	: Further information: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available.
Materials to avoid	: May react with oxygen and strong oxidizing agents, such as
Hazardous decomposition products	chlorates, nitrates, peroxides, etc. : Carbon oxides
Other data	: No decomposition if stored and applied as directed.
TION 11: Toxicological infor	mation
Greenbase™ Flowzan® Biop Acute oral toxicity	 Acute toxicity estimate: 3,886 mg/kg Method: Calculation method
Greenbase™ Flowzan® Biop	bolymer : Acute toxicity estimate: 4,296 mg/kg
Acute dermal toxicity	

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	Method: Calculation method
	Acute toxicity estimate: 4,295 mg/kg Method: Calculation method
Greenbase™ Flowzan® Bio Skin irritation	polymer : May cause skin irritation in susceptible persons.
Greenbase™ Flowzan® Bio Eye irritation	polymer : May cause irreversible eye damage.
Sensitization	
Di(Ethylene Glycol) Butyl Ether	: Did not cause sensitization on laboratory animals.
Repeated dose toxicity	
Di(Ethylene Glycol) Butyl Ether	 Species: Rat, Male and female Sex: Male and female Application Route: Oral NOEL: 250 mg/kg Lowest observable effect level: 1,000 mg/kg Method: OECD Test Guideline 408 Target Organs: Blood, Liver, Kidney Species: Rat, Male and female Sex: Male and female Application Route: inhalation (vapor) NOEL: 94 mg/m3 Method: OECD Guideline 413 Target Organs: Lungs Species: Rat, Male and female Sex: Male and female Application Route: Dermal NOEL: 2,000 mg/kg
Genotoxicity in vitro	Target Organs: Skin
Di(Ethylene Glycol) Butyl Ether	: Test Type: Ames test Concentration: 0.2, 1.5, 10, 20 Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
	Test Type: Chromosome aberration test in vitro Metabolic activation: with and without metabolic activation Method: OECD Guideline 476 Result: negative
Genotoxicity in vivo	
Di(Ethylene Glycol) Butyl Ether	: Test Type: Mouse micronucleus assay Species: Mouse Route of Application: Oral Result: negative
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Di(Ethylene Glycol) Butyl	: Species: Mouse
Ether	Sex: male and female
	Application Route: Oral
	Dose: 0, 720, 1340, 2050mg/kg bw
	Number of exposures: continuous Test period: 14 weeks
	Method: OECD Test Guideline 416
	NOAEL Parent: 720 mg/kg
	NOAEL F1: 720 mg/kg
	NOAEL F2: 720 mg/kg Information given is based on data obtained from similar
	substances.
Developmental Toxicity	
Di(Ethylene Glycol) Butyl	: Species: Rat
Ether	Application Route: Oral diet
	Dose: 25, 115, 633 mg/kg/d
	Number of exposures: GD 0 -20 d Method: OECD Guideline 414
	NOAEL Teratogenicity: 633 mg/kg
	NOAEL Maternal: 633 mg/kg
	No adverse effects expected
	Species: Rabbit
	Application Route: Dermal Dose: 25, 115, 633 mg/kg/d
	Exposure time: 4 h/d
	Number of exposures: GD 8 -19 d
	Method: OECD Guideline 414
	NOAEL Teratogenicity: 1,000 mg/kg NOAEL Maternal: 1,000 mg/kg
	No adverse effects expected
Greenbase™ Flowzan® Bio	polymer
Aspiration toxicity	: No aspiration toxicity classification.
CMR effects	. Comine seriait a Net evailable
Di(Ethylene Glycol) Butyl Ether	: Carcinogenicity: Not available Mutagenicity: Tests on bacterial or mammalian cell cultures
	did not show mutagenic effects., In vivo tests did not show
	mutagenic effects
	Teratogenicity: Animal testing did not show any effects on fetal development.
	Reproductive toxicity: Animal testing did not show any effects
	on fertility.
Greenbase™ Flowzan® Bio	polymer
Further information	: No data available.
TION 12: Ecological informa	ation

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cotoxicity effects Foxicity to fish Di(Ethylene Glycol) Butyl Ether	: LC50: > 1,000 mg/l Exposure time: 96 h
	Species: Scophthalmus maximus (Flatfish, Flounder) semi-static test Method: OECD Test Guideline 203
Foxicity to daphnia and othe	r aquatic invertebrates
Di(Ethylene Glycol) Butyl Ether	: EC50: > 1,000 mg/l Exposure time: 48 h Species: Acartia tonsa (Marine Copepod) static test Method: ISO TC147/SC5/WG2
Foxicity to algae	
Di(Ethylene Glycol) Butyl Ether	 EC50: > 1,000 mg/l Exposure time: 72 h Species: Skeletonema costatum (marine diatom) Growth inhibition Method: ISO 10253
Biodegradability	: Taking into consideration the properties of several ingredient the product is estimated not to be readily biodegradable according to OECD classification.
Elimination information (persist	tence and degradability)
Bioaccumulation	: This material is not expected to bioaccumulate.
Aobility	: No data available
Results of PBT assessment Di(Ethylene Glycol) Butyl Ether	: This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).
Additional ecological nformation	: This material is not expected to be harmful to aquatic organisms.
	No data available
Ecotoxicology Assessment	
Short-term (acute) aquatic nazard	: This material is not expected to be harmful to aquatic organisms.
ong-term (chronic) aquatic	: This material is not expected to be harmful to aquatic organisms.

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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 containe Send to a licensed waste management company.	r.
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

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TRANSPORTATION BY THIS AGENCY.

Maritime transport in bulk according to IMO instruments

CTION 15: Regulatory infor	mation
National legislation	
SARA 311/312 Hazards	: Serious eye damage or eye irritation
EPCRA - EMERGENCY PL	ANNING COMMUNITY RIGHT - TO – KNOW
CERCLA Reportable Quantity	: This material does not contain any components with a CERCLA RQ.
SARA 302 Reportable Quantity	: This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	: This material does not contain any components with a section 302 EHS TPQ.
SARA 304 Reportable Quantity	: This material does not contain any components with a section 304 EHS RQ.
SARA 313 Components	: The following components are subject to reporting levels established by SARA Title III, Section 313:
	: Di(Ethylene Glycol) Butyl Ether - 112-34-5
Clean Air Act	
Potential Class	product neither contains, nor was manufactured with a Class I or s II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR Subpt. A, App.A + B).
The following chemical(s) a	are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61): : Di(Ethylene Glycol) Butyl Ether - 112-34-5

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).

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the U.S. Clean Air Act Section 111 SOCMI Intermediate ne Glycol) Butyl Ether - 112-34-5 ne Glycol) Butyl Ether - 112-34-5 Gum - 11138-66-2 luct does not contain any chemicals known to the State nia to cause cancer, birth, or any other reproductive
ne Glycol) Butyl Ether - 112-34-5 ne Glycol) Butyl Ether - 112-34-5 Gum - 11138-66-2 luct does not contain any chemicals known to the State
ne Glycol) Butyl Ether - 112-34-5 Gum - 11138-66-2 luct does not contain any chemicals known to the State
Gum - 11138-66-2 luct does not contain any chemicals known to the State
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Gum - 11138-66-2 luct does not contain any chemicals known to the State
A substance or substances in this product is not registered or notified to be registered. Importation or nanufacture of this product is still permitted provided hat it does not exceed the REACH minimum threshold
quantity of the non-regulated substances. Not in compliance with the inventory On or in compliance with the active portion of the FSCA inventory All components of this product are on the Canadian
DSL On the inventory, or in compliance with the inventory Not in compliance with the inventory On the inventory, or in compliance with the inventory A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. mportation or manufacture of this product is still permitted provided the Korean Importer of Record has hemselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
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SECTION 16: Other information

: Health Hazard: 2 Fire Hazard: 1 Reactivity Hazard: 0	2 0
: CPC00051	
	Fire Hazard: 1 Reactivity Hazard: 0

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.

ACGIH	American Conference of	LD50	Lethal Dose 50%
	Government Industrial Hygienists		
AIIC	Australian Inventory of Industrial Chemicals	LOAEL	Lowest Observed Adverse Effe
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agenc
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupatio 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 Concentra
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 Substan
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recov 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	TSCA	Toxic Substance Control Act

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	New Chemical Substances		
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%	ATE	Acute toxicity estimate