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

Product information

Product Name : Clarizan™ Biopolymer
Material : 1097266, 1036302, 1033946, 1033945, 1036242

Use : Drilling Mud Additive

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
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
Argentina: +(54)-1159839431

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

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 : Combustible dust

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
Molecular formula: UVCB

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xanthan Gum</td>
<td>11138-66-2</td>
<td>100</td>
</tr>
</tbody>
</table>

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: Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed: 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.

Specific hazards during firefighting: Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.

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: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Hazardous decomposition products: Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions: Avoid dust formation.

Environmental precautions: If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up: Pick up and arrange disposal without creating dust. Clean up promptly by sweeping or vacuum. Keep in suitable, closed containers for disposal.

Additional advice: Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

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. Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient.

Advice on protection against fire and explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Provide appropriate exhaust ventilation at places where dust is formed.

Storage

SDS Number: 100000014024
SECTION 8: Exposure controls/personal protection

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 workplace 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. 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
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. Wear as appropriate: Protective suit. Safety shoes.

Hygiene measures
General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance
Physical state : Solid
Color : Cream to light yellow
Odor : Mild
Odor Threshold : No data available
Clarizan™ Biopolymer

Version 2.2

Revision Date 2019-12-09

Safety data

Flash point : Not applicable
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Oxidizing properties : No
Autoignition temperature : Not applicable
Thermal decomposition : No data available
Molecular formula : UVCB
Molecular weight : Not applicable
pH : Not applicable
Pour point : No data available
Melting point/range : Not applicable
Boiling point/boiling range : Not applicable
Vapor pressure : Not applicable
Relative density : 1.4 - 1.6
Density : No data available
Water solubility : Completely Soluble
Partition coefficient: n-octanol/water : No data available
Solubility in other solvents : No data available
Viscosity, kinematic : No data available
Relative vapor density : Not applicable
Evaporation rate : No data available
Dust deflagration index Kst : > 0.0 m.b_/s

SECTION 10: Stability and reactivity
Clarizan™ Biopolymer

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 reactions

Hazardous reactions: Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid: Generation of Dusts.

Materials to avoid: No data available.

Thermal decomposition: No data available

Hazardous decomposition products: Carbon oxides

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

SECTION 11: Toxicological information

Clarizan™ Biopolymer
Acute oral toxicity: LD50: > 5,000 mg/kg
Species: Rat

Clarizan™ Biopolymer
Acute inhalation toxicity: LC50: > 20 mg/l
Exposure time: 1 h
Species: Rabbit

Clarizan™ Biopolymer
Acute dermal toxicity: No data available

Clarizan™ Biopolymer
Skin irritation: No skin irritation

Clarizan™ Biopolymer
Eye irritation: No eye irritation

Clarizan™ Biopolymer
Sensitization: Does not cause skin sensitization.
**Clarizan™ Biopolymer**

Version 2.2

<table>
<thead>
<tr>
<th>Aspiration toxicity</th>
<th>: No aspiration toxicity classification.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarizan™ Biopolymer Further information</td>
<td>: Product dust may be irritating to eyes, skin and respiratory system.</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

**Ecotoxicity effects**

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>: This material is not expected to be harmful to aquatic organisms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>: This material is not expected to be harmful to aquatic organisms.</td>
</tr>
<tr>
<td>Toxicity to algae</td>
<td>: This material is not expected to be harmful to aquatic organisms.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biodegradability</th>
<th>: This material is expected to be readily biodegradable.</th>
</tr>
</thead>
</table>

**Elimination information (persistence and degradability)**

<table>
<thead>
<tr>
<th>Bioaccumulation</th>
<th>: This material is not expected to bioaccumulate.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>: No data available</td>
</tr>
<tr>
<td>Additional ecological information</td>
<td>: This material is not expected to be harmful to aquatic organisms.</td>
</tr>
</tbody>
</table>

**Ecotoxicology Assessment**

<table>
<thead>
<tr>
<th>Short-term (acute) aquatic hazard</th>
<th>: This material is not expected to be harmful to aquatic organisms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term (chronic) aquatic hazard</td>
<td>: This material is not expected to be harmful to aquatic organisms.</td>
</tr>
</tbody>
</table>

**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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
**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** : Combustible dust
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: 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 Components: 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).

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 SOCMI Intermediate or Final VOC’s (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know: No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right To Know: No components are subject to the New Jersey Right to Know Act.
Clarizan™ Biopolymer

California Prop. 65 Components: 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
- Switzerland CH INV: On the inventory, or in compliance with the inventory
- United States of America (USA) TSCA: On or in compliance with the active portion of the 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: A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.
- Philippines PICCS: On the inventory, or in compliance with the inventory
- China IECSC: On the inventory, or in compliance with the inventory
- Taiwan TCSI: 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: 697800

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

<table>
<thead>
<tr>
<th>ACGIH</th>
<th>American Conference of Government Industrial Hygienists</th>
<th>LD50</th>
<th>Lethal Dose 50%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</td>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>EGEST</td>
<td>EOSCA Generic Exposure Scenario Tool</td>
<td>OSHA</td>
<td>Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
</tr>
<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act.</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
<td>TWA</td>
<td>Time Weighted Average</td>
</tr>
<tr>
<td>ENCS</td>
<td>Japan, Inventory of Existing and New Chemical Substances</td>
<td>TSCA</td>
<td>Toxic Substance Control Act</td>
</tr>
<tr>
<td>KECI</td>
<td>Korea, Existing Chemical Inventory</td>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
</tbody>
</table>