SAFETY DATA SHEET

Drill-Well™ D294 RM

Version 1.3
Revision Date 2019-06-20

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

Product information

Product Name : Drill-Well™ D294 RM
Material : 1115432
Use : Rheology Modifier
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
Eye irritation, Category 2A

SDS Number:100000102837 1/12
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:

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.

SECTION 3: Composition/information on ingredients

Synonyms: Rheology Modifier

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(Ethylene Glycol) Butyl Ether</td>
<td>112-34-5</td>
<td>40 - 60</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General advice: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

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

In case of eye contact: Immediately flush eye(s) with plenty of water. 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.
SECTION 5: Firefighting measures

Flash point : 124 °C (255 °F)

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 : Normal measures for preventive fire protection.

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 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. 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.

Use : Rheology Modifier

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

SDS Number:100000102837 3/12
**SAFETY DATA SHEET**

**Drill-Well™ D294 RM**

Version 1.3

Revision Date 2019-06-20

**Components** | **Basis** | **Value** | **Control parameters** | **Note**
--- | --- | --- | --- | ---
Di(Ethylene Glycol) Butyl Ether | ACGIH | TWA | 10 ppm. | liver eff, kidney eff, hematologic eff, Inhalable fraction and vapor

**US**

**Components** | **Basis** | **Value** | **Control parameters** | **Note**
--- | --- | --- | --- | ---
Di(Ethylene Glycol) Butyl Ether | ACGIH | TWA | 10 ppm. | liver eff, kidney eff, hematologic eff, Inhalable fraction and vapor

**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 Organic Vapors. 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. Tightly fitting safety goggles.

Skin and body protection: Wear as appropriate:. Choose body protection according to 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: viscous
Physical state: Liquid
Color: Black
Odor: Mild

SDS Number:100000102837 4/12
SAFETY DATA SHEET

Drill-Well™ D294 RM

Version 1.3

Revision Date 2019-06-20

Safety data

Flash point : 124 °C (255 °F)
Lower explosion limit : Not applicable
Upper explosion limit : Not applicable
Oxidizing properties : No
Molecular weight : Not applicable
pH : 6 - 8
Pour point : -7 °C (20 °F)
Melting point/range : -7 °C (20 °F)
Freezing point : -68 °C (-90 °F)
Boiling point/boiling range : 230 °C (446 °F)
Vapor pressure : Not applicable
Relative density : 0.978
Solubility in other solvents : Partly soluble

SECTION 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

Hazardous reactions : Further information: No decomposition if stored and applied as directed.
Conditions to avoid : No data available.
Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Drill-Well™ D294 RM
Acute oral toxicity : Acute toxicity estimate: 4,017 mg/kg
Method: Calculation method

SDS Number: 100000102837  5/12
<table>
<thead>
<tr>
<th><strong>Drill-Well™ D294 RM</strong></th>
<th></th>
</tr>
</thead>
</table>
| **Acute dermal toxicity** | Acute toxicity estimate: 9,213 mg/kg  
Method: Calculation method  
Acute toxicity estimate: 4,607 mg/kg  
Method: Calculation method |
| **Skin irritation** | May cause skin irritation in susceptible persons. |
| **Eye irritation** | 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: OCED 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  
Target Organs: Skin |
| **Genotoxicity in vitro** | 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 |
Ether  
Species: Mouse  
Route of Application: Oral  
Result: negative

Reproductive toxicity
Di(Ethylene Glycol) Butyl Ether:  
Species: Mouse  
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 Ether:  
Species: Rat  
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

CMR effects
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.

Drill-Well™ D294 RM Further information:  
No data available.

SECTION 12: Ecological information
Ecotoxicity effects

Toxicity 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

Toxicity to daphnia and other 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

Toxicity 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 ingredients, the product is estimated not to be readily biodegradable according to OECD classification.

Elimination information (persistence and degradability)

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility : 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 information

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

Long-term (chronic) aquatic hazard : 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.

<table>
<thead>
<tr>
<th>Product</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contaminated packaging</td>
<td>Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>SARA 311/312 Hazards</th>
<th>Serious eye damage or eye irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERCLA Reportable Quantity</td>
<td>This material does not contain any components with a CERCLA RQ.</td>
</tr>
<tr>
<td>SARA 302 Reportable Quantity</td>
<td>This material does not contain any components with a SARA 302 RQ.</td>
</tr>
<tr>
<td>SARA 302 Threshold Planning Quantity</td>
<td>No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.</td>
</tr>
<tr>
<td>SARA 304 Reportable Quantity</td>
<td>This material does not contain any components with a section 304 EHS RQ.</td>
</tr>
<tr>
<td>SARA 313 Components</td>
<td>The following components are subject to reporting levels established by SARA Title III, Section 313:</td>
</tr>
<tr>
<td></td>
<td>Di(Ethylene Glycol) Butyl Ether - 112-34-5</td>
</tr>
</tbody>
</table>

#### 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).

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):

| Di(Ethylene Glycol) Butyl Ether - 112-34-5 |

#### US State Regulations
Pennsylvania Right To Know : Di(Ethylene Glycol) Butyl Ether - 112-34-5

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 : A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.
Switzerland CH INV : Not in compliance with the inventory
United States of America (USA) TSCA : On TSCA Inventory
Canada NDSL : This product contains one or several components listed in the Canadian NDSL.
Australia AICS : Not 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 : Not in compliance with the inventory
China IECSC : Not in compliance with the inventory
Taiwan TCSI : Not in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 1
Reactivity Hazard: 0

Further information

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.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
<th>Symbol</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>AIICS</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>EC50</td>
<td>Effective Concentration 50%</td>
<td>NOEC</td>
<td>No Observed Effect Concentration</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>&gt;=</td>
<td>Greater Than or Equal To</td>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
</tr>
<tr>
<td>IC50</td>
<td>Inhibition Concentration 50%</td>
<td>SARATV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
<td>TLV</td>
<td>Toxic Substance Control Act</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>&lt;=</td>
<td>Less Than or Equal To</td>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>