



Safety Data Sheet

LIQUI-BEADS®

SECTION 1 – IDENTIFICATION

PRODUCT NAME: LIQUI-BEADS®
EFFECTIVE DATE: May 25, 2018
CHEMICAL FAMILY: Drilling Fluid Additive
USAGE: Lubricating Agent
MANUFACTURER: SUN DRILLING PRODUCTS CORP.
503 Main Street
Belle Chasse, LA 70037

CANADIAN IMPORTER : SUN DRILLING PRODUCTS CORP.
#102 6660 Taylor Drive
Red Deer, AB TYP 1Y3
(403) 341-5046 (for 24-hr Emergency call Chemtrec)

CHEMICAL EMERGENCY – Spill, Leak, Fire, Accident
USA/Canada Call 1-800 424-9300 CHEMTREC

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Inhalation, mist)	Category 4
Skin Corrosion/Irritation	Category 2
Skin sensitizer	Category 1B

Unknown toxicity

Acute toxicity, oral	9.2 %
Acute toxicity, dermal	9.2 %
Acute toxicity, inhalation, vapor	76.2 %
Acute toxicity, inhalation, dust or mist	49.9 %

Label Elements:

Hazard Symbol:



Signal Word:

Danger

Hazard Statement:

H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.



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H317: May cause an allergic skin reaction.

Precautionary Statement:

Prevention: IF SWALLOWED: P301 + P310 + P315: Get immediate medical advice/attention. Immediately call a Poison Center or doctor.
IF SKIN IRRITATION OCCURS: P264 + P280: Wash skin thoroughly after contact. Wear protective clothing to prevent direct skin contact.
IF INHALED: P261 + 271: Avoid breathing mist/vapors/spray. Use only outdoors or in a well-ventilated area.

Response: IF INHALED: P304 + P340 + P312: Remove person to fresh air and keep comfortable for breathing. Call a Poison Center/doctor if you feel unwell.
IF SKIN IRRITATION OCCURS: P302 + P352: Wash with plenty of water.
P332 + P313: If skin irritation occurs, get medical advice/attention.
P362 + P364: Remove contaminated clothing and wash it before reuse.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, as well as product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None identified.

3. Composition/information on ingredients

Chemical name	CAS number	Percent by Weight
Mineral oil	64742-53-6	20 - 30%
Mineral oil	64742-46-7	20 - 30%
Mineral oil	8042-47-5	20 - 30%
Amides, from Diethylenetriamine, alkenoic acid and tall-oil fatty acids	Not determined	10 - 20%
Butyl cellosolve	111-76-2	1 - 5%

The criteria for listing components in the composition are as follows: Carcinogens are listed when present at 0.1% or greater and biologically available; components which are otherwise hazardous according to OSHA are listed when present at 1.0% or greater. Non-hazardous components may be listed at 3.0% or greater if not proprietary in nature. This is not intended to be complete compositional disclosure. Refer to section 14 for applicable states Right-to-Know and other regulatory information.

4. First-aid measures

General information: IF exposed or concerned: Get medical advice/attention.

Ingestion: Rinse mouth. Get medical attention if symptoms occur.

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/.../if you feel unwell.

Skin Contact: Take off contaminated clothing and wash before re-use. Wash skin



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Eye contact: thoroughly with soap and water. If skin irritation or rash occurs: Get medical attention. Launder contaminated clothing before reuse. Flush thoroughly with water. If irritation occurs, get medical assistance. Remove contact lenses, if present and easy to do. Continue rinsing.

Most important symptoms/effects, acute and delayed

Symptoms: Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:

CO₂, Dry chemical or Foam. Water can be used to cool and protect exposed material.

Unsuitable extinguishing media:

Not determined.

Specific hazards arising from the chemical:

See section 10 for additional information.

Special protective equipment and precautions for firefighters

Special firefighting procedures:

No data available.

Special protective equipment for fire-fighters:

Wear full protective fire gear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep upwind. Keep unauthorized personnel away. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up:

Dike far ahead of larger spill for later recovery and disposal. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. If liquid is too viscous for pumping, scrape it up. Collect for salvage or disposal. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Environmental Precautions: Avoid release to the environment. Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage



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Precautions for safe handling: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Avoid breathing mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Avoid contact with skin. Observe good industrial hygiene practices. Use only in well-ventilated areas. Use personal protective equipment as required. Wash hands thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace. Launder contaminated clothing before reuse. Avoid environmental contamination.

Maximum Handling Temperature:

Not determined.

Conditions for safe storage, including any incompatibilities:

Store away from incompatible materials. See section 10 for incompatible materials.

Maximum Storage Temperature:

Not determined.

8. Exposure controls/personal protection

Control Parameters: Occupational Exposure Limits

Chemical name	type	Exposure Limit Values	Source
Mineral oil - Inhalable fraction.	TWA	5 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Mineral oil - Mist.	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil - Mist.	STEL	10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil	Ceil_Time	1,800 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil	REL	350 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Mineral oil - Mist.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Mineral oil - Inhalable fraction.	TWA	5 mg/m3	US. ACGIH Threshold Limit Values (02 2012)
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Mineral oil - Mist.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Butyl cellosolve	TWA	20 ppm	US. ACGIH Threshold Limit Values (02 2012)
Butyl cellosolve	REL	5 ppm 24 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Butyl cellosolve	PEL	50 ppm 240 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)



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Biological Limit Values

Chemical name	Exposure Limit Values	Source
Butyl cellosolve (Butoxyacetic acid (BAA), with hydrolysis: Sampling time: End of shift.)	200 mg/g (Creatinine in urine)	ACGIH BEI (03 2013)

Appropriate engineering controls:

No special requirements under ordinary conditions of use and with adequate ventilation.

Individual protection measures, such as personal protective equipment

- General information:** Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
- Eye/face protection:** Wear tight-fitting goggles or face shield.
- Skin Protection**
- Hand Protection:** Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water. Gloves should always be inspected before each use and discarded if they show tears, pinholes, or signs of wear.
- Other:** Wear apron or protective clothing in case of contact. Do not wear rings, watches or similar apparel that could entrap the material. Chemical resistant boots.
- Respiratory Protection:** A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to mist or vapors is likely. Use self-contained breathing apparatus for entry into confined space, for other poorly ventilated areas and for large spill clean-up sites. Use respirator with a combination organic vapor and dust/mist cartridge.
- Hygiene measures:** Observe good industrial hygiene practices. Avoid contact with skin. Wash contaminated clothing before reuse. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Appearance

- Physical state:** Liquid
- Form:** Viscous Liquid



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Color:	Tan to brown
Odor:	Characteristic
Odor threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	> 350.1 °F (176.7 °C)
Flash Point:	> 201 °F (94 °C) (Cleveland Open Cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	0.9 60.1 °F (15.6 °C)
Solubility(ies)	
Solubility in water:	Dispersible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	> 20 mPa.s (104 °F (40 °C))
Other information	
Bulk density:	8 kg/m ³
Pour Point Temperature:	< -20.00 °F (-28.89 °C)

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Will not occur.
Conditions to avoid:	Not determined.
Incompatible Materials:	Strong oxidizing agents. Strong oxidizing agents. Alkalies.
Hazardous Decomposition Products:	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, nitrogen oxides, and other products of incomplete combustion.

11. Toxicological information

Information on likely routes of exposure



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Inhalation: May be fatal if swallowed and enters airways. Harmful if inhaled.

Ingestion: May be fatal if swallowed and enters airways.

Skin Contact: Causes skin irritation.

Eye contact: No data available.

Information on toxicological effects

Acute toxicity

Oral

Product: Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion can cause central nervous system effects such as headache, dizziness, drowsiness, and generalized weakness. Ingestion may cause red blood cell hemolysis and possible liver and kidney injury. ATEmix > 10,000 mg/kg.

Dermal

Product: ATEmix > 5,000 mg/kg

Inhalation

Product: High concentrations may cause headaches, dizziness, weakness, irritability and other behavioral changes, nausea, and vomiting.
ATEmix (, 4 h): > 20 mg/l. Vapor
ATEmix (, 4 h): 2 - 5 mg/l. Dusts, mists and fumes

Skin Corrosion/Irritation:

Product: Causes skin irritation.
Remarks: Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.

Serious Eye Damage/Eye Irritation:

Product: Remarks: Not classified as a primary eye irritant.

Respiratory sensitization:

No data available

Skin sensitization:

Mineral oil Classification: Not a skin sensitizer. (Read across)
Mineral oil Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.
Butyl cellosolve Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.

Specific Target Organ Toxicity - Single Exposure:

Product: If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

Mineral oil May cause irritation to the mucous membranes and upper respiratory tract.

Mineral oil If material is misted or if vapors are generated from heating, exposure



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may cause irritation of mucous membranes and the upper respiratory tract.

Butyl cellosolve

Nose, throat and lung irritant.

Aspiration Hazard:

Mineral oil

Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in severe injury to the lungs and death.

Mineral oil

Material can be aspirated into the lungs during the act of swallowing or vomiting. This could result in severe injury to the lungs and death.

Other effects:

Butyl cellosolve

Central nervous system

Chronic Effects Carcinogenicity:

Product:

This product contains mineral oils which are severely refined and not considered carcinogenic. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

Mineral oil

All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test. This product contains mineral oils which are severely refined and not considered carcinogenic.

Mineral oil

All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

Butyl cellosolve

Butyl cellosolve: A National Toxicology Program (NTP) chronic inhalation study revealed some evidence of carcinogenic activity in male and female mice, equivocal evidence in female rats. and no evidence in male rats.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity:

Mineral oil

The Ames Salmonella test for mutagenicity was negative for this product.

Butyl cellosolve

This material has not exhibited mutagenic or genotoxic potential in laboratory tests.

Reproductive toxicity:

Butyl cellosolve

Based on available data this product is not expected to be classified a reproductive hazard. Butyl cellosolve causes fetotoxicity in lab animals at doses which are maternally toxic.

Specific Target Organ Toxicity - Repeated Exposure:

Butyl cellosolve

Repeated overexposure may result in liver and kidney damage.
Dermal: Target Organ(s): Blood



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Inhalation: Target Organ(s): Blood

Oral: Target Organ(s): Blood

12. Ecological information

Ecotoxicity

Fish

Mineral oil

LC 50 (Not reported, 96 h): > 10,000 mg/l

NOEC (Not reported, 96 h): 10,000 mg/l

Amides, from Diethylenetriamine,
alkenoic acid and tall-oil fatty acids

LC 50 (Zebra Fish, 4 Days): > 100 mg/l

Butyl cellosolve

LC 50 (Bluegill Sunfish, 4 d): 1,490 mg/l

LC 50 (Rainbow Trout, 4 d): 1,471 mg/l

LC 50 (Zebra Fish, 21 d): > 100 mg/l

NOEC (Zebra Fish, 21 d): > 100 mg/l

Aquatic Invertebrates

Mineral oil

EC 50 (Water flea (Daphnia magna), 2 d): > 10,000 mg/l

EC 50 (Water flea (Daphnia magna), 21 d): > 10 mg/l

NOEC (Water flea (Daphnia magna), 21 d): 10 mg/l

Mineral oil

EC 50 (Water flea (Daphnia magna), 2 d): > 100 mg/l

NOEC (Water flea (Daphnia magna), 2 d): >= 100 mg/l

EC 50 (Water flea (Daphnia magna), 21 d): > 10 mg/l

NOEC (Water flea (Daphnia magna), 21 d): 10 mg/l

Butyl cellosolve

EC 50 (Water flea (Daphnia magna), 2 d): 1,550 mg/l

EC 50 (Water flea (Daphnia magna), 21 d): 297 mg/l

NOEC (Water flea (Daphnia magna), 21 d): 100 mg/l

Toxicity to Aquatic Plants

Mineral oil

LC 50 (Algae (Pseudokirchneriella subcapitata), 3 d): > 100 mg/l

NOEC (Algae (Pseudokirchneriella subcapitata), 3 d): > 100 mg/l

Butyl cellosolve

EC 50 (Green algae (Selenastrum capricornutum), 3 d): 911 mg/l

EC 50 (Green algae (Selenastrum capricornutum), 7 d): > 1,000 mg/l

NOEC (Green algae (Selenastrum capricornutum), 3 d): 88 mg/l

Toxicity to soil dwelling organisms

No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available



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Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

Butyl cellosolve

EC 50 (Sludge, 0.1 d): > 1,000 mg/l

Persistence and Degradability

Biodegradation

Mineral oil

OECD TG 301 F, 31 %, 28 d, Not readily degradable.

Mineral oil

OECD TG 301 F, 60 %, 28 d, Readily biodegradable

Mineral oil

OECD TG 301 F, 31.13 %, 28 d, Not readily degradable.

Amides, from Diethylenetriamine,
alkenoic acid and tall-oil fatty acids

OECD TG 301 D, 2.7 %, 28 d, Not readily degradable.

Butyl cellosolve

OECD TG 302 B, 100 %, 28 d, Readily biodegradable
OECD TG 301 E, 95 %, 28 d, Readily biodegradable
OECD TG 301 B, 90.4 %, 28 d, Readily biodegradable

Bioaccumulative Potential

Bioconcentration Factor (BCF)

No data available

Partition Coefficient n-octanol / water (log Kow)

Butyl cellosolve

Log Kow: 0.81 (Measured)

Mobility:

No data available.

Other Adverse Effects:

No data available.

13. Disposal considerations

Disposal instructions:

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

Contaminated Packaging:

Container packaging may exhibit hazards.

14. Transport information

DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.



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Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

None known.

Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. Review classification requirements before shipping materials at elevated temperatures.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4)

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories

SARA 302 Extremely Hazardous Substance

SARA 304 Emergency Release Notification

Chemical Identity	CAS #	Percent by Weight	Reportable Quantity
Butyl cellosolve	111-76-2	1.8	See regulation for further details

SARA 311/312 Hazardous Chemical

Immediate (Acute) Health Hazards

Delayed (Chronic) Health Hazard

SARA 313 (TRI Reporting)

Chemical Identity	CAS #	Percent by Weight	Reportable Quantity
Butyl cellosolve	111-76-2	1.8	See regulation for further details

Inventory Status

Australia (AICS)

This product contains a substance that is not listed on the Australia Inventory of Chemical Substances.

Canada (DSL/NDSL)

This product meets the definition of an Article under the Canadian Environmental Protection Act.

China (IECSC)

This product meets the definition of an Article under the Chinese Provisions on the Environmental Administration of New Chemical Substances regulations.

European Union (REACH)



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To obtain information on the REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

Japan (ENCS)

This product contains a substance that is not listed on the Japanese Existing and New Chemical Substances (ENCS) list.

Korea (ECL)

This product meets the definition of an Article under Korea's chemical control laws.

New Zealand (NZIoC)

This product meets the definition of an Article under all applicable regulations.

Philippines (PICCS)

May require notification before sale under Philippines Republic Act 6969.

Switzerland (SWISS)

May require notification before sale in Switzerland.

Taiwan (TCSCA)

This product meets the definition of an article under Taiwan's chemical control laws.

United States (TSCA)

All components of this material are in compliance with Section 5 of TSCA. This product meets the definition of an Article under TSCA.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

16. Other information, including date of preparation or last revision

SDS REVISION DATE: May 25, 2018

HMIS Hazard ID

Health: 2*

Flammability: 1

Physical Hazards: 0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

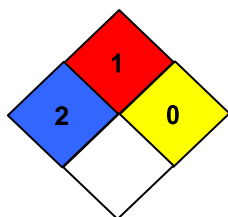
NFPA Hazard ID

Red: Flammability

Blue: Health

Yellow: Reactivity

White: Special Hazard



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

FOOT NOTES: N/A NOT APPLICABLE

ND – NO DATA AVAILABLE

> = GREATER THAN

< = LESS THAN



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REVISION STATEMENT: Changes have been made throughout this Safety Data Sheet. Please read the entire document.

DISCLAIMER:

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