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

### Product information

<table>
<thead>
<tr>
<th>Field</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>Molyflo® Flotation Oil</td>
</tr>
<tr>
<td>Material</td>
<td>1117265, 1113924, 1106088, 1096191, 1104322, 1016849, 1016848</td>
</tr>
<tr>
<td>Use</td>
<td>Mineral Processing Aide</td>
</tr>
<tr>
<td>Company</td>
<td>Chevron Phillips Chemical Company LP</td>
</tr>
<tr>
<td></td>
<td>Mining Chemicals</td>
</tr>
<tr>
<td></td>
<td>10001 Six Pines Drive</td>
</tr>
<tr>
<td></td>
<td>The Woodlands, TX 77380</td>
</tr>
</tbody>
</table>

### 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**
- Flammable liquids, Category 4
- Acute toxicity, Category 4, Inhalation
- Skin irritation, Category 2
- Carcinogenicity, Category 1B
- Specific target organ toxicity - repeated exposure, Category 2,

SDS Number: 1000000013412  1/13
Molyflo® Flotation Oil

Blood, Liver, thymus gland
Aspiration hazard, Category 1

Labeling

Symbol(s): 

Signal Word: Danger

Hazard Statements:
H227: Combustible liquid.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H332: Harmful if inhaled.
H350: May cause cancer.
H373: May cause damage to organs (Blood, Liver, thymus gland) through prolonged or repeated exposure.

Precautionary Statements:
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapor/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:

IARC
Group 2B: Possibly carcinogenic to humans

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: Flotation Oil
Light Cycle Oil
LCO

Molecular formula: UVCB

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Cycle Oil</td>
<td>64741-59-9</td>
<td>100</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. Symptoms of poisoning may appear several hours later. 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 skin contact: If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

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 induce vomiting. 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: 82.2°C (180.0°F)
Method: closed cup

Autoignition temperature: No data available

Unsuitable extinguishing media: High volume water jet.

Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus for firefighting if necessary.
**Further information**: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

**Fire and explosion protection**: Normal measures for preventive fire protection.

**Hazardous decomposition products**: Hydrocarbons. Carbon oxides.

### SECTION 6: Accidental release measures

**Personal precautions**: Use personal protective equipment. Ensure adequate ventilation.

**Environmental precautions**: Prevent product from entering drains. 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**: 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 exposure - obtain special instructions before use. 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. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

**Use**: Mineral Processing Aide

### SECTION 8: Exposure controls/personal protection

**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. 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: 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: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Flame retardant antistatic 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**: Liquid
- **Physical state**: Liquid
- **Color**: Amber
- **Odor**: Petroleum

**Safety data**

- **Flash point**: 82.2°C (180.0°F)  
  Method: closed cup
- **Lower explosion limit**: 1 % (V)
- **Upper explosion limit**: 6 % (V)
- **Oxidizing properties**: No
- **Autoignition temperature**: No data available
- **Molecular formula**: UVCB
- **Molecular weight**: Not applicable
- **pH**: Not applicable
- **Pour point**: -38°C (-36°F)  
  Method: ASTM D5972
Boiling point/boiling range: 148.89°C (300.00°F)
Vapor pressure: 0.13 kPa
Relative density: 0.93
Water solubility: Negligible
Partition coefficient: n-octanol/water: No data available
Viscosity, kinematic: 2.5 cSt at 40°C (104°F)
Relative vapor density: No data available
Evaporation rate: 1
Percent volatile: 1%

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: Hazardous polymerization does not occur.
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 chlorates, nitrates, peroxides, etc.

Hazardous decomposition products: Hydrocarbons
Carbon oxides

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

SECTION 11: Toxicological information

Acute oral toxicity
Light Cycle Oil: LD50: 3,200 - 4,660 mg/kg
Species: Rat
Sex: male and female
### Acute inhalation toxicity

**Light Cycle Oil**
- **LC50:** 4.65 mg/l
- **Exposure time:** 4 h
- **Species:** Rat
- **Sex:** male and female
- **Test atmosphere:** dust/mist
- **Method:** OECD Test Guideline 403

### Acute dermal toxicity

**Light Cycle Oil**
- **LD50:** > 2,000 mg/kg
- **Species:** Rabbit
- **Sex:** male and female

### Skin irritation

**Light Cycle Oil**
- **Skin irritation**

### Eye irritation

**Light Cycle Oil**
- **No eye irritation**

### Sensitization

**Light Cycle Oil**
- Did not cause sensitization on laboratory animals.

### Repeated dose toxicity

**Light Cycle Oil**
- **Species:** Rat, males
  - **Sex:** males
  - **Application Route:** Dermal
  - **Dose:** 0, 8, 25, 125, 500, 1250 mg/kg
  - **Exposure time:** 90 day
  - **Number of exposures:** 5 days/wk
  - **NOEL:** 25 mg/kg
  - **Target Organs:** Blood, Liver, Thymus
- **Species:** Rat, females
  - **Sex:** females
  - **Application Route:** Dermal
  - **Dose:** 0, 8, 25, 125, 500, 1250 mg/kg
  - **Exposure time:** 90 day
  - **Number of exposures:** 5 days/wk
  - **NOEL:** 125 mg/kg
  - **Target Organs:** Blood, Liver, Thymus

### Genotoxicity in vitro

**Light Cycle Oil**
- **Test Type:** Modified Ames test
- **Result:** positive
Test Type: Mouse lymphoma assay
Result: positive

Test Type: Sister Chromatid Exchange Assay
Result: negative

Genotoxicity in vivo
Light Cycle Oil : Test Type: Cytogenetic assay
Result: negative

Developmental Toxicity
Light Cycle Oil : Species: Rat
Application Route: Dermal
Dose: 1, 50, 250 mg/kg/d
Number of exposures: once daily
Test period: GD 0-19
Method: OECD Guideline 414
NOAEL Teratogenicity: 1 mg/kg
NOAEL Maternal: 1 mg/kg

Molyflo® Flotation Oil
Aspiration toxicity : May be fatal if swallowed and enters airways.

CMR effects
Light Cycle Oil : Carcinogenicity: Possible human carcinogen

Molyflo® Flotation Oil
Further information : Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish
Light Cycle Oil : LL50: > 0.3 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
semi-static test Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates
Light Cycle Oil : EL50: 0.32 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Immobilization Method: OECD Test Guideline 202

Toxicity to algae
Light Cycle Oil : EL50: 0.51 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition Method: OECD Test Guideline 201

M-Factor
Distillates (petroleum), light catalytic cracked  :  M-Factor (Acute Aquat. Tox.)  1
M-Factor (Chron. Aquat. Tox.)  1

Biodegradability
Light Cycle Oil : aerobic
56.32 %
Testing period: 28 d
Method: OECD Test Guideline 301F
Expected to be inherently biodegradable.

Results of PBT assessment
Light Cycle Oil : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information
Ecotoxicology Assessment
Short-term (acute) aquatic hazard
Light Cycle Oil : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard
Light Cycle Oil : Very toxic to aquatic life with long lasting effects.

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)**
UN1268, PETROLEUM DISTILLATES, N.O.S., COMBUSTIBLE LIQUID, III

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**
UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (LIGHT CYCLE OIL), 9, III, (82.2°C), MARINE POLLUTANT, (LIGHT CYCLE OIL)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**
UN3334, AVIATION REGULATED LIQUID, N.O.S., (LIGHT CYCLE OIL), 9, III

**ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))**
UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (LIGHT CYCLE OIL), 9, III

**RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))**
UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (LIGHT CYCLE OIL), 9, III

**ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)**
UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (LIGHT CYCLE OIL), 9, III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

**SECTION 15: Regulatory information**

<table>
<thead>
<tr>
<th>National legislation</th>
</tr>
</thead>
</table>
| **SARA 311/312 Hazards** | Fire Hazard  
Chronic Health Hazard  
Acute Health Hazard |
| **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. |
Molyflo® Flotation Oil

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.

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.
SAFETY DATA SHEET

Molyflo® Flotation Oil

Version 1.5

Revision Date 2019-12-18

Notification status

Europe REACH : This mixture contains only ingredients which have been registered according to Regulation (EU) No. 1907/2006 (REACH).

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 : Not 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: 2
Fire Hazard: 2
Reactivity Hazard: 0

Further information

Legacy SDS Number : 59560

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>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Health</td>
</tr>
</tbody>
</table>

SDS Number:100000013412

12/13
<table>
<thead>
<tr>
<th>Substances List</th>
<th>Safety &amp; Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNS Central Nervous System</td>
<td>NTP National Toxicology Program</td>
</tr>
<tr>
<td>CAS Chemical Abstract Service</td>
<td>NZIoC New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>EC50 Effective Concentration</td>
<td>NOAEL No Observable Adverse Effect Level</td>
</tr>
<tr>
<td>EC50 Effective Concentration 50%</td>
<td>NOEC No Observed Effect Concentration</td>
</tr>
<tr>
<td>EGEST EOSCA Generic Exposure Scenario Tool</td>
<td>OSHA Occupational Safety &amp; Health Administration</td>
</tr>
<tr>
<td>EOSCA European Oilfield Specialty Chemicals Association</td>
<td>PEL Permissible Exposure Limit</td>
</tr>
<tr>
<td>EINECS European Inventory of Existing Chemical Substances</td>
<td>PICCS Philippines Inventory of Commercial Chemical Substances</td>
</tr>
<tr>
<td>MAK Germany Maximum Concentration Values</td>
<td>PRNT Presumed Not Toxic</td>
</tr>
<tr>
<td>GHS Globally Harmonized System</td>
<td>RCRA Resource Conservation Recovery Act</td>
</tr>
<tr>
<td>IC50 Inhibition Concentration 50%</td>
<td>STEL Short-term Exposure Limit</td>
</tr>
<tr>
<td>IARC International Agency for Research on Cancer</td>
<td>TLV Threshold Limit Value</td>
</tr>
<tr>
<td>IECSC Inventory of Existing Chemical Substances in China</td>
<td>TWA Time Weighted Average</td>
</tr>
<tr>
<td>ENCS Japan, Inventory of Existing and New Chemical Substances</td>
<td>TSCA Toxic Substance Control Act</td>
</tr>
<tr>
<td>KECI Korea, Existing Chemical Inventory</td>
<td>UVCB Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
</tr>
<tr>
<td>&lt;= Less Than or Equal To</td>
<td>WHMIS Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>LC50 Lethal Concentration 50%</td>
<td></td>
</tr>
</tbody>
</table>

SDS Number:100000013412