SAFETY DATA SHEET

ORFOM® SX-11 (Solvent Extraction Diluent)

Version 1.5
Revision Date 2018-09-26

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

Product information
Product Name: ORFOM® SX-11 (Solvent Extraction Diluent)
Material: 1116964, 1103227, 1098695, 1036313, 1016873, 1016874

Company: Chevron Phillips Chemical Company LP
Mining Chemicals
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: Aspiration hazard, Category 1

Labeling
Symbol(s): 

Signal Word: Danger

Hazard Statements: H304: May be fatal if swallowed and enters airways.


Storage: P405 Store locked up.

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

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

Molecular formula: UVCB

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>C13-C16 Isoalkanes</td>
<td>68551-20-2</td>
<td>99 - 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. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

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

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. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.
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Do not ingest. If swallowed then seek immediate medical assistance.

### SECTION 5: Firefighting measures

| Flash point | : 100.6 °C (213.1 °F) Method: ASTM D 93 |
| Autoignition temperature | : No data available |

| 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. |
| Hazardous decomposition products | : 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. 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**
Safety Data Sheet

ORFOM® SX-11 (Solvent Extraction Diluent)

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.

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. 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: 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. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

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.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance
Form: Liquid

SDS Number: 100000067799 4/13
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**Revision Date 2018-09-26**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
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<tr>
<td>Color</td>
<td>Colorless</td>
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<tr>
<td>Odor</td>
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<tr>
<td><strong>Safety data</strong></td>
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<td><strong>Flash point</strong></td>
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<tr>
<td><strong>Relative density</strong></td>
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<tr>
<td></td>
<td>at 15.6 °C (60.1 °F)</td>
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<tr>
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<td></td>
<td>at 38 °C (100 °F)</td>
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<tr>
<td><strong>Relative vapor density</strong></td>
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<td></td>
<td>(Air = 1.0)</td>
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<tr>
<td><strong>Evaporation rate</strong></td>
<td>&lt; 1</td>
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</tbody>
</table>

### SECTION 10: Stability and reactivity

**Reactivity**: Stable under recommended storage conditions.
**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 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**: Carbon oxides

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

### SECTION 11: Toxicological information

**Acute oral toxicity**

C13-C16 Isoalkanes: LD50: > 5,000 mg/kg
Species: Rat
Sex: male and female
Method: OECD Test Guideline 401
Information given is based on data obtained from similar substances.

**Acute inhalation toxicity**

C13-C16 Isoalkanes: LC50: > 5.3 mg/l
Exposure time: 4 h
Species: Rat
Sex: male and female
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration.
Information given is based on data obtained from similar substances.

**Acute dermal toxicity**

C13-C16 Isoalkanes: LD50: > 2,000 mg/kg
Species: Rabbit
Sex: male and female
Method: OECD Test Guideline 402
Information given is based on data obtained from similar substances.
### Skin irritation

**C13-C16 Isoalkanes**: Repeated exposure may cause skin dryness or cracking. May irritate skin. Information given is based on data obtained from similar substances.

### Eye irritation

**C13-C16 Isoalkanes**: No eye irritation. Information given is based on data obtained from similar substances.

### Sensitization

**C13-C16 Isoalkanes**: Classification: Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances.

### Repeated dose toxicity

**C13-C16 Isoalkanes**: Species: Rat, male and female

- **Sex**: male and female
- **Application Route**: oral gavage
- **Exposure time**: 13 wk
- **Number of exposures**: 7 d/wk
- **NOEL**: > 5,000 mg/kg
- **Method**: OECD Test Guideline 408

No significant adverse effects were reported. Information given is based on data obtained from similar substances.

Species: Rat, male and female

- **Sex**: male and female
- **Application Route**: Inhalation
- **Exposure time**: 13 wk
- **Number of exposures**: 6 h/d
- **NOEL**: 30 mg/l
- **Method**: OECD Test Guideline 413

No significant adverse effects were reported. Information given is based on data obtained from similar substances.

Species: Rat, male and female

- **Sex**: male and female
- **Application Route**: Dermal
- **Exposure time**: 13 wk
- **Number of exposures**: 5 d/wk
- **NOEL**: > 495 mg/kg
- **Method**: OECD Test Guideline 411

No significant adverse effects were reported. Information given is based on data obtained from similar substances.

### Genotoxicity in vitro

**C13-C16 Isoalkanes**: Test Type: Reverse mutation assay

- **Metabolic activation**: with and without metabolic activation
- **Method**: OECD Test Guideline 471
- **Result**: negative

Remarks: Information given is based on data obtained from similar substances.
Test Type: Cytogenetic assay  
Test system: Chinese hamster cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
Remarks: Information given is based on data obtained from similar substances.

Test Type: Mouse lymphoma assay  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
Remarks: Information given is based on data obtained from similar substances.

Reproductive toxicity
C13-C16 Isoalkanes: Species: Rat  
Sex: male and female  
Application Route: oral gavage  
Dose: 50, 100, 750 mg/kg/d  
Exposure time: 70 d  
Number of exposures: Daily  
Method: OECD Test Guideline 416  
NOAEL Parent: >= 750 mg/kg  
NOAEL F1: >= 750 mg/kg  
No adverse effects expected  
Information given is based on data obtained from similar substances.

ORFOM® SX-11 (Solvent Extraction Diluent)  
Aspiration toxicity: May be fatal if swallowed and enters airways.

CMR effects
C13-C16 Isoalkanes: Carcinogenicity: Not available  
Mutagenicity: In vitro tests did not show mutagenic effects  
Reproductive toxicity: No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

ORFOM® SX-11 (Solvent Extraction Diluent)  
Further information: Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish
C13-C16 Isoalkanes: LL50: > 1,000 mg/l  
Exposure time: 96 h  
Species: Oncorhynchus mykiss (rainbow trout)  
static test Method: OECD Test Guideline 203  
Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates

C13-C16 Isoalkanes: EL50: > 1,000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Immobilization Method: OECD Test Guideline 202
Information given is based on data obtained from similar substances.

Toxicity to algae

C13-C16 Isoalkanes: EL50: > 1,000 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition Method: OECD Test Guideline 201
Information given is based on data obtained from similar substances.

Toxicity to bacteria

C13-C16 Isoalkanes: > 100 mg/l
Exposure time: 3 h
Respiration inhibition Method: OECD Test Guideline 209
Information given is based on data obtained from similar substances.

Biodegradability

C13-C16 Isoalkanes: aerobic
Result: Readily biodegradable.
74 %
Testing period: 28 d
Method: OECD Test Guideline 306
Information given is based on data obtained from similar substances.

Mobility

C13-C16 Isoalkanes: immobile

Results of PBT assessment
C13-C16 Isoalkanes: Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information

Ecotoxicology Assessment

Short-term (acute) aquatic hazard
C13-C16 Isoalkanes: This product has no known ecotoxicological effects.
Long-term (chronic) aquatic hazard
C13-C16 Isoalkanes : This product has no known ecotoxicological 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)
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 : Aspiration hazard

EPCRA - EMERGENCY PLANNING 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 : 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.

**Notification status**

Europe REACH : On the inventory, or in compliance with the inventory
United States of America (USA) TSCA : On 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 : On the inventory, or in compliance with the inventory
Philippines PICCS : On the inventory, or in compliance with the inventory
China IECSC : On the inventory, or in compliance with the inventory

**SECTION 16: Other information**

**NFPA Classification** : Health Hazard: 1
Fire Hazard: 1
Reactivity Hazard: 0
Further information

Legacy SDS Number : 98110

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>Key or legend to abbreviations and acronyms used in the safety data sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACGIH</strong></td>
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<td><strong>AICS</strong></td>
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<td><strong>DSL</strong></td>
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