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

Product information

Product Name: n-Heptane (Pure Grade)
Material: 1119723, 1099971, 1016082, 1099970, 1084145, 1061726, 1021845, 1028621, 1021842, 1021844, 1028384, 1028355, 1021843, 10455211

Company: Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Local: See Company Address

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 +32.14.583516 (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
GHS Classification and labelling according to JIS Z7252-2014 and JIS Z7253-2012 (GHS 2011)

Classification

Flammable liquids, Category 2
Skin irritation, Category 2
Specific target organ systemic toxicity - single exposure, Category 3, Central nervous system
Aspiration hazard, Category 1
Acute aquatic toxicity, Category 1

SDS Number: 100000067062
**SAFETY DATA SHEET**

**n-Heptane (Pure Grade)**

**Version 1.8**

**Revision Date 2017-06-21**

Chronic aquatic toxicity, Category 1

**Revision 4.2**

**Labeling**

**Symbol(s):**

- Flammable
- Health hazard
- Environmental hazard
- Sea life hazard

**Signal Word:** Danger

**Hazard Statements:**

- **H225:** Highly flammable liquid and vapor.
- **H304:** May be fatal if swallowed and enters airways.
- **H315:** Causes skin irritation.
- **H336:** May cause drowsiness or dizziness.
- **H410:** Very toxic to aquatic life with long lasting effects.

**Precautionary Statements:**

**Prevention:**

- **P210:** Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- **P243:** Take precautionary measures against static discharge.
- **P280:** Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

- **P301 + P310:** IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- **P331:** Do NOT induce vomiting.
- **P370 + P378:** In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**

- **P403 + P233:** Store in a well-ventilated place. Keep container tightly closed.

**Disposal:**

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

**SECTION 3: Composition/information on ingredients**

**Synonyms:** Normal Heptane

Dipropilmetano

n-Heptane, 99%

**Molecular formula:** C7H16

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
<th>ENCS/ISHL number</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>142-82-5</td>
<td>100%</td>
<td>2-7</td>
</tr>
</tbody>
</table>

**SECTION 4: First aid measures**

**General advice:** Move out of dangerous area. Show this material safety data

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## n-Heptane (Pure Grade)

**Version 1.8**  
**Revision Date 2017-06-21**

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### If inhaled
Move to fresh air. 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
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 induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.

### SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Flash point**                               | -4 °C (25 °F)  
Method: Tag closed cup                                                  |
| **Autoignition temperature**                  | 203.85 °C (398.93 °F)                                                    |
| **Suitable extinguishing media**              | Dry chemical. Carbon dioxide (CO2). Alcohol-resistant foam.              |
| **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. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers. |
| **Fire and explosion protection**             | Do not spray on an open flame or any other incandescent material. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition. |
| **Hazardous decomposition products**          | Carbon oxides.                                                           |

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## SECTION 6: Accidental release measures

**Personal precautions**: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**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**: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

## SECTION 7: Handling and storage

### Handling

**Advice on safe handling**: Avoid formation of aerosol. 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. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations. 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. Review all operations, which have the potential to generating and accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106 “Flammable and Combustible Liquids”; National Fire Protection Association (NFPA 77), "Recommended Practice on Static Electricity"; and/or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and stray Currents".

**Advice on protection against fire and explosion**: Do not spray on an open flame or any other incandescent material. Use only explosion-proof equipment. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

### Storage

**Requirements for storage areas and containers**: No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working
SAFETY DATA SHEET

n-Heptane (Pure Grade)

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materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Control parameters</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>JP OEL JSOH</td>
<td>OEL-M</td>
<td>200 ppm, 820 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

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 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. Wear as appropriate: Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.

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
n-Heptane (Pure Grade)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Clear</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>Sweet</td>
</tr>
</tbody>
</table>

**Safety data**

- **Flash point** : -4 °C (25 °F)
  - Method: Tag closed cup
- **Lower explosion limit** : 1 %(V)
- **Upper explosion limit** : 7 %(V)
- **Oxidizing properties** : no
- **Autoignition temperature** : 203.85 °C (398.93 °F)
- **Molecular formula** : C7H16
- **Molecular weight** : 100.23 g/mol
- **pH** : Not applicable
- **Pour point** : No data available
- **Boiling point/boiling range** : 98 °C (208 °F)
- **Vapor pressure** : 1.60 PSI
  - at 38 °C (100 °F)
- **Relative density** : 0.69
  - at 16 °C (61 °F)
- **Density** : 5.75 L/G
  - at 20 °C (68 °F)
- **Water solubility** : Negligible
- **Partition coefficient: n-octanol/water** : No data available
- **Relative vapor density** : 3.4
  - (Air = 1.0)
- **Evaporation rate** : 3.46
- **Percent volatile** : > 99%

**Other information**

- **Conductivity** : < 1 pSm
  - at 20 °C

**SECTION 10: Stability and reactivity**
**n-Heptane (Pure Grade)**

### Chemical stability
This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### Possibility of hazardous reactions

**Conditions to avoid**: Not applicable.

**Materials to avoid**: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. Oxidizing solids. Oxidizing liquids.

**Hazardous decomposition products**: Carbon oxides

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

### SECTION 11: Toxicological information

#### Acute oral toxicity

**n-Heptane**
- LD50: > 5,000 mg/kg
- Species: Rat
- Method: OECD Test Guideline 401
- Information given is based on data obtained from similar substances.

#### Skin irritation

**n-Heptane (Pure Grade)**
- Irritating to skin.
- May cause skin irritation in susceptible persons.

#### Eye irritation

**n-Heptane (Pure Grade)**
- Vapors may cause irritation to the eyes, respiratory system and the skin.

#### Sensitization

**n-Heptane**
- Did not cause sensitization on laboratory animals.
- Information given is based on data obtained from similar substances.

#### Repeated dose toxicity

**n-Heptane**
- Species: Rat, male
- Sex: male
- Application Route: Inhalation
- Dose: 12.47 mg/l
- Exposure time: 16 wk
- Number of exposures: 12 h/d, 7 d/wk
- NOEL: 12.47 mg/l
- No adverse effect has been observed in chronic toxicity tests.

#### Reproductive toxicity

**n-Heptane**
- Species: Rat
- Application Route: Inhalation
n-Heptane (Pure Grade)

Dose: 0, 900, 3000, 9000 ppm
Number of exposures: 6 hr/d, 5 d/wk
Test period: 13 wk
Method: OECD Test Guideline 416
NOAEL Parent: 9000 ppm
NOAEL F1: 3000 ppm
NOAEL F2: 3000 ppm

Developmental Toxicity

n-Heptane:
Species: Rat
Application Route: Inhalation
Dose: 0, 900, 3000, 9000 ppm
Exposure time: GD6-15
Number of exposures: 6 hrs/d
NOAEL Teratogenicity: 9000 ppm
NOAEL Maternal: 3000 ppm

n-Heptane (Pure Grade)
Aspiration toxicity:
May be fatal if swallowed and enters airways.
Substances known to cause human aspiration toxicity hazards
or to be regarded as if they cause human aspiration toxicity hazard.

CMR effects

n-Heptane:
Mutagenicity: Tests on bacterial or mammalian cell cultures
did not show mutagenic effects.
Teratogenicity: Animal testing did not show any effects on
fetal development.
Reproductive toxicity: No toxicity to reproduction

n-Heptane (Pure Grade)
Further information:
Concentrations substantially above the TLV value may cause
narcotic effects. Symptoms of overexposure may be
headache, dizziness, tiredness, nausea and vomiting.
Solvents may degrease the skin.

SECTION 12: Ecological information

Toxicity to fish

n-Heptane:
LL50: 1.284 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Method: QSAR

LC50: 375 mg/l
Exposure time: 96 h
Species: Tilapia mosambica (Fish)

Toxicity to daphnia and other aquatic invertebrates

n-Heptane:
EC50: 1.5 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
**n-Heptane (Pure Grade)**

**Version 1.8**  
**Revision Date**: 2017-06-21

<table>
<thead>
<tr>
<th>SAFETY DATA SHEET</th>
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<tbody>
<tr>
<td>SDS Number: 100000067062</td>
</tr>
</tbody>
</table>

**static test**  
Toxic to aquatic organisms.  
LC50: 0.1 mg/l  
Exposure time: 96 h  
Species: *Mysidopsis bahia* (mysid shrimp)  
semi-static test Very toxic to aquatic organisms.

### Toxicity to algae

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Effect</th>
<th>LC50</th>
<th>Exposure</th>
<th>Species</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>Toxic</td>
<td>0.1 mg/l</td>
<td>96 h</td>
<td><em>Mysidopsis bahia</em> (mysid shrimp)</td>
<td></td>
</tr>
</tbody>
</table>

**Toxicity to algae**

**n-Heptane**  
: EL50: 4.338 mg/l  
Exposure time: 72 h  
Species: *Pseudokirchneriella subcapitata* (microalgae)  
Method: QSAR

### Biodegradability

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Result</th>
<th>%</th>
<th>Testing period</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>Readily biodegradable.</td>
<td>70</td>
<td>10 d</td>
</tr>
</tbody>
</table>

### Ecotoxicology Assessment

**Acute aquatic toxicity**

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>Very toxic to aquatic life.</td>
</tr>
</tbody>
</table>

**Chronic aquatic toxicity**

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

### Results of PBT assessment

<table>
<thead>
<tr>
<th>Compounds</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Heptane</td>
<td>Non-classified PBT substance, Non-classified vPvB substance</td>
</tr>
</tbody>
</table>

### Additional ecological information

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. 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**  
The product should not be allowed to enter drains, water courses or the soil. 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. Do not burn, or use a cutting
torch on, the empty drum.

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)
UN1206, HEPTANES, 3, II, MARINE POLLUTANT, (N-HEPTANE)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
UN1206, HEPTANES, 3, II, (-4 °C), MARINE POLLUTANT, (N-HEPTANE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN1206, HEPTANES, 3, II

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
UN1206, HEPTANES, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (N-HEPTANE)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
UN1206, HEPTANES, 3, II, ENVIRONMENTALLY HAZARDOUS, (N-HEPTANE)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
UN1206, HEPTANES, 3, II, ENVIRONMENTALLY HAZARDOUS, (N-HEPTANE)

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

SECTION 15: Regulatory information

National legislation
Poisonous and Deleterious Substances Control Law
: Not relevant

Industrial Safety and Health Law
Substances Subject to be
: heptane (526)
n-Heptane (Pure Grade)

Notified Names

Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances) : Inflammable Substance

Hazardous Substances Subject to Labeling Requirements Ordinance on Prevention of Organic Solvent Poisoning : Not relevant

Chemical Substance Control Law : Not relevant

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof : Not relevant

Other regulations

Fire Service Law : Flammable liquids
Type 1 petroluems
Hazardous rank II

Notification status

Europe REACH : On the inventory, or in compliance with the inventory
United States of America (USA) TSCA : On the inventory, or in compliance with the inventory
Canada DSL : On the inventory, or in compliance with the inventory
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 KECl : 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

Further information

Legacy SDS Number : 133

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>
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</thead>
<tbody>
<tr>
<td>ACGIH</td>
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<tr>
<td>LD50</td>
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<td>AIICS</td>
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