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

**Product information**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>AlphaPlus® 1-Hexadecene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>1076762, 1037049, 1037048</td>
</tr>
</tbody>
</table>

**Company**

Chevron Phillips Chemical Company LP  
Normal Alpha Olefins (NAO)  
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**

GHS Classification and Labeling: Follow GB 13690, GB 15258 and GB 30000.2 to GB 30000.29 (GHS 2011)

**Emergency Overview**

**Danger**

- **Physical state:** Liquid  
- **Color:** Clear, colorless  
- **Hazards:** May be fatal if swallowed and enters airways.

**Classification**

Aspiration hazard, Category 1

**SDS Number:** 100000065709  
1/13
AlphaPlus® 1-Hexadecene

Version 1.13

Revision Date 2019-10-11

Labeling

Symbol(s):

Signal Word: Danger

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

Precautionary Statements:

Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331: Do NOT induce vomiting.

Storage:
P405: Store locked up.

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

SECTION 3: Composition/information on ingredients

Synonyms:
NAO 16
1-Hexadecene
(C16 H32)

Molecular formula: C16H32

Chemical name | CAS-No. / EINECS-No. | Concentration [wt%]
--- | --- | ---
1-Hexadecene | 629-73-2 | 93%
2-Butyl-1-Dodecene | 115146-98-0 | 2%
2-Ethyl-1-Tetradecene | 56919-55-2 | 2%
2-Hexyl-1-Decene | 13043-55-5 | 2%

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. 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: 132 °C (270 °F)
Method: PMCC

Autoignition temperature: 240 °C (464 °F)

Unsuitable extinguishing media: High volume water jet.

Specific hazards during firefighting: Standard procedure for chemical fires.

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: No data available.

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 or spray mist. 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.
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

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 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 Dusts and Mists / P100. 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: Lightweight protective clothing.
## 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
- **Physical state**: Liquid
- **Color**: Clear, colorless

#### Safety data
- **Flash point**: 132 °C (270 °F)
  - Method: PMCC
- **Lower explosion limit**: 0.5 % (V)
- **Upper explosion limit**: 5.8 % (V)
- **Oxidizing properties**: no
- **Autoignition temperature**: 240 °C (464 °F)
- **Molecular formula**: C₁₆H₃₂
- **Molecular weight**: 224.48 g/mol
- **pH**: Not applicable
- **Melting point/range**: 4 °C (39 °F)
- **Freezing point**: 4 °C (39 °F)
- **Pour point**: No data available
- **Boiling point/boiling range**: 285 °C (545 °F)
- **Vapor pressure**: 0.00 MMHG
  - at 25 °C (77 °F)
  - < 0.01 kPa
    - at 65 °C (149 °F)
- **Relative density**: 0.78
  - at 15.6 °C (60.1 °F)
- **Density**: 785 kg/m³
  - at 15 °C (59 °F)
  - 780 kg/m³
    - at 20 °C (68 °F)
  - 760 kg/m³
    - at 50 °C (122 °F)
### Water solubility
Soluble in hydrocarbons; insoluble in water

### Partition coefficient: n-octanol/water
No data available

### Viscosity, kinematic
3.83 cSt at 20 °C (68 °F)

### Relative vapor density
7.72 (Air = 1.0)

### Evaporation rate
No data available

### SECTION 10: Stability and reactivity

**Reactivity**
Stable at normal ambient temperature and pressure.

**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**
No data available.

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

### SECTION 11: Toxicological information

**Acute oral toxicity**

1-Hexadecene: LD50: 10 g/kg
Species: Rat
Sex: male and female
Method: OECD Test Guideline 401
Test substance: yes

**Acute inhalation toxicity**

1-Hexadecene: LC50: > 8.5 mg/l
Exposure time: 1 h
Species: Rat
Sex: male  
Test atmosphere: dust/mist

**Acute dermal toxicity**

1-Hexadecene  
LD50: > 2020 mg/kg  
Species: Rabbit  
Sex: male and female  
Information given is based on data obtained from similar substances.

**Skin irritation**

1-Hexadecene  
Mild skin irritation  
Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin.

**Eye irritation**

1-Hexadecene  
No eye irritation

**Sensitization**

1-Hexadecene  
Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**

1-Hexadecene  
Species: Rat, Male and female  
Sex: Male and female  
Application Route: oral gavage  
Dose: 100, 500, or 1000 mg/kg/day  
Exposure time: 42-51 days  
Number of exposures: Daily  
NOEL: 1000 mg/kg bw/day  
Method: OECD Guideline 422  
Information given is based on data obtained from similar substances.
Species: Rat, male  
Sex: male  
Application Route: oral gavage  
Dose: 10, 101, 1010, 3365 mg/kg/day  
Exposure time: 4 weeks  
Number of exposures: 7 days/week  
NOEL: 101 mg/kg bw/day  
Method: OECD Test Guideline 407  
Target Organs: Stomach  
Information given is based on data obtained from similar substances.

Species: Rat, female  
Sex: female  
Application Route: oral gavage  
Dose: 10, 101, 1010, 3365 mg/kg/day  
Exposure time: 4 weeks  
Number of exposures: 7 days/week  
NOEL: 1010 mg/kg bw/day  
Method: OECD Test Guideline 407  
Information given is based on data obtained from similar substances.

Species: Rat, Male and female  
Sex: Male and female  
Application Route: oral gavage  
Dose: 100, 500, 1000 mg/kg/day  
Exposure time: 13 weeks  
Number of exposures: 7 days/week  
NOEL: 1000 mg/kg bw/day  
Information given is based on data obtained from similar substances.

Species: Rat, Male and female  
Sex: Male and female  
Application Route: Inhalation  
Dose: 300, 1000, 3000 ppm  
Exposure time: 13 weeks  
Number of exposures: 6 hrs/day, 5 days/week  
NOEL: 3000 ppm  
Information given is based on data obtained from similar substances.

**Genotoxicity in vitro**  
1-Hexadecene  
Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Result: negative
AlphaPlus® 1-Hexadecene

Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Mammalian cell gene mutation assay
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: Mammalian cell gene mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Guideline 476
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Genotoxicity in vivo
1-Hexadecene: Test Type: Micronucleus test
Species: Mouse
Dose: 1,000, 10,000, 25,000 ppm
Result: negative

Reproductive toxicity
1-Hexadecene: Species: Rat
Sex: female
Application Route: oral gavage
Dose: 100, 500, 1000 mg/kg/day
Number of exposures: Daily
Test period: 41 to 55 days
Method: OECD Guideline 421
NOAEL Parent: 1000 mg/kg bw/day
NOAEL F1: 1000 mg/kg bw/day
Information given is based on data obtained from similar substances.

Species: Rat
Sex: male and female
Application Route: oral gavage
Dose: 100, 500, 1000 mg/kg/day
Number of exposures: Daily
Test period: 42-51 days
Method: OECD Guideline 422
NOAEL Parent: 1000 mg/kg bw/day
NOAEL F1: 1000 mg/kg bw/day
Information given is based on data obtained from similar substances.

AlphaPlus® 1-Hexadecene
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

**1-Hexadecene**
- **Carcinogenicity**: Not classifiable as a human carcinogen.
- **Mutagenicity**: Did not show mutagenic effects in animal experiments.
- **Teratogenicity**: Did not show teratogenic effects in animal experiments.
- **Reproductive toxicity**: No toxicity to reproduction

**AlphaPlus® 1-Hexadecene**

**Further information**: Solvents may degrease the skin.

### SECTION 12: Ecological information

**Toxicity to fish**

**1-Hexadecene**
- **LL50**: > 1000 mg/L
- Exposure time: 96 h
- Species: Oncorhynchus mykiss (rainbow trout)
- Method: OECD Test Guideline 203
- The product has low solubility in the test medium. An aqueous dispersion was tested.

**Toxicity to daphnia and other aquatic invertebrates**

**1-Hexadecene**
- **EL50**: < 1000 mg/L
- Exposure time: 48 h
- Species: Daphnia magna (Water flea)
- Method: OECD Test Guideline 202
- The product has low solubility in the test medium. An aqueous dispersion was tested.

**Toxicity to algae**

**1-Hexadecene**
- **EC50**: > 1000 mg/L
- Exposure time: 72 h
- Species: Selenastrum capricornutum (algae)
- Method: OECD Test Guideline 201
- The product has low solubility in the test medium. An aqueous dispersion was tested.

**Biodegradability**

**1-Hexadecene**: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

**Bioaccumulation**

**1-Hexadecene**: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.
Mobility
1-Hexadecene : No data available

Results of PBT assessment
1-Hexadecene : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological information
This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment
Short-term (acute) aquatic hazard : No toxicity at the limit of solubility.

Long-term (chronic) aquatic hazard
1-Hexadecene : 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.

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

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 : 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  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

**Further information**

Legacy SDS Number: PE0021

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>ACGIH</td>
</tr>
<tr>
<td>AICS</td>
</tr>
<tr>
<td>DSL</td>
</tr>
<tr>
<td>NDSL</td>
</tr>
<tr>
<td>CNS</td>
</tr>
<tr>
<td>CAS</td>
</tr>
<tr>
<td>EC50</td>
</tr>
<tr>
<td>EC50</td>
</tr>
<tr>
<td>EGEST</td>
</tr>
<tr>
<td>EOSCA</td>
</tr>
<tr>
<td>EINECS</td>
</tr>
<tr>
<td>MAK</td>
</tr>
<tr>
<td>GHS</td>
</tr>
<tr>
<td>&gt;=</td>
</tr>
<tr>
<td>IC50</td>
</tr>
<tr>
<td>IARC</td>
</tr>
<tr>
<td>IECSC</td>
</tr>
<tr>
<td>ENCS</td>
</tr>
<tr>
<td>KECI</td>
</tr>
<tr>
<td>&lt;=</td>
</tr>
<tr>
<td>LC50</td>
</tr>
</tbody>
</table>