# SAFETY DATA SHEET

**AlphaPlus® 1-Tetradecene**

**Version 1.6**  
**Revision Date 2019-11-14**

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

**Product information**

- **Product Name**: AlphaPlus® 1-Tetradecene  
- **Material**: 1064098, 1037032, 1037031

**Company**: Chevron Phillips Chemical Company LP  
Normal Alpha Olefins (NAO)  
10001 Six Pines Drive  
The Woodlands, TX 77380

**Local**: CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.  
C/O DONG WOO CORPORATION  
B-2601,JEONGJAIL-RO,  
BUNDANG-GU,SEONGNAMI-SI,  
GYEONGGI-DO,13557  
SOUTH KOREA  
Telephone no.: +612-9186-1132

**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**

- **Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2016-19) (GHS 2011)**

**Classification**: Skin corrosion/irritation, Category 2

**SDS Number**: 100000067489
AlphaPlus® 1-Tetradecene

Aspiration hazard, Category 1
Long-term (chronic) aquatic hazard, Category 4

Labeling

Symbol(s):  
Signal Word: Danger

Hazard Statements:  
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H413: May cause long lasting harmful effects to aquatic life.

Precautionary Statements:  
Prevention:
P264: Wash the contact area thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves.

Response:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P321: Specific treatment (see supplemental first aid instructions on this label).
P331: Do NOT induce vomiting.
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.

Storage:
P405: Store locked up.

Disposal:
P501: Dispose of contents and container according to wastes control act.

SECTION 3: Composition/information on ingredients

Synonyms:  
Tetradec-1-ene (C14H28)
1-Tetradecene (C14H28)
NAO 14  (C14H28)

Molecular formula:  
C14H28

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration</th>
<th>KECl Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Tetradecene</td>
<td>1120-36-1</td>
<td>94%</td>
<td>KE-33369</td>
</tr>
<tr>
<td>2-Butyl-1-Decene</td>
<td>51655-65-3</td>
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</tr>
<tr>
<td>2-Ethyl-1-Dodecene</td>
<td>19780-34-8</td>
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<td></td>
</tr>
<tr>
<td>2-Hexyl-1-Octene</td>
<td>19780-80-4</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

SDS Number: 100000067489
## 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 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**: 107°C (225°F)

**Autoignition temperature**: 235°C (455°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.
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

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

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 workplace. 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
Physical state: Liquid
Color: Colorless

Safety data
Flash point: 107°C (225°F)
Lower explosion limit: > 0.5 % (V)
Upper explosion limit: < 5.4 % (V)
Oxidizing properties: no

Autoignition temperature: 235°C (455°F)
Molecular formula: C14H28
Molecular weight: 196.42 g/mol
pH: Not applicable
Pour point: No data available
Melting point/range: -13.9°C (7.0°F)
Boiling point/boiling range: 251°C (484°F)
## Vapor pressure

- **0.01 MMHG**
  - at 25°C (77°F)
- **< 0.10 kPa**
  - at 65°C (149°F)

## Relative density

- **0.77**
  - at 15.6 °C (60.1 °F)

## Density

- **775 kg/m³**
  - at 15°C (59°F)
- **774 kg/m³**
  - at 25°C (77°F)
- **750 kg/m³**
  - at 50°C (122°F)

## Water solubility

- Soluble in hydrocarbon solvents; insoluble in water.

## Partition coefficient: n-octanol/water

- No data available

## Viscosity, kinematic

- **2.61 cSt**
  - at 20°C (68°F)

## Relative vapor density

- **6.8**
  - (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 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

AlphaPlus® 1-Tetradecene Acute oral toxicity : LD50: > 5,000 mg/kg
Species: Rat
Sex: male and female
Information given is based on data obtained from similar substances.

AlphaPlus® 1-Tetradecene Acute inhalation toxicity : LC50: > 5 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: dust/mist
Method: Acute toxicity estimate
Information given is based on data obtained from similar substances.
Not classified due to data which are conclusive although insufficient for classification.

AlphaPlus® 1-Tetradecene Acute dermal toxicity : LD50 Dermal: > 2,020 mg/kg
Species: Rabbit
Sex: male and female
Information given is based on data obtained from similar substances.

AlphaPlus® 1-Tetradecene Skin irritation : Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin.

AlphaPlus® 1-Tetradecene Eye irritation : No eye irritation
Information given is based on data obtained from similar substances.

AlphaPlus® 1-Tetradecene Sensitization : Did not cause sensitization on laboratory animals. Information given is based on data obtained from similar substances.

Genotoxicity in vitro
1-Tetradecene : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Result: negative
## Genotoxicity in vivo

1-Tetradecene

- **Test Type:** Micronucleus test
- **Species:** Mouse
- **Method:** Mutagenicity (micronucleus test)
- **Result:** negative

## Reproductive toxicity

1-Tetradecene

- **Species:** Rat
- **Sex:** male
- **Application Route:** Oral diet
- **Dose:** 0, 100, 500, 1000 mg/kg
- **Exposure time:** 43-47 days
- **Method:** OECD Guideline 422
- **NOAEL Parent:** 1,000 mg/kg
- **NOAEL F1:** 1,000 mg/kg

- **Species:** Rat
- **Sex:** female
- **Application Route:** Oral diet
- **Dose:** 0, 100, 500, 1000 mg/kg
- **Exposure time:** 46-47 days
- **Method:** OECD Guideline 422
- **NOAEL Parent:** 1,000 mg/kg
- **NOAEL F1:** 1,000 mg/kg

## AlphaPlus® 1-Tetradecene

### 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-Tetradecene

- Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
- Reproductive toxicity: No toxicity to reproduction

### Further information

Solvents may degrease the skin.

## SECTION 12: Ecological information

### Toxicity to fish
**Toxicity to daphnia and other aquatic invertebrates**

1-Tetradecene  
Exposure time: 96 h  
Species: Oncorhynchus mykiss (rainbow trout)  
Test substance: yes  
Method: OECD Test Guideline 203  
The product has low solubility in the test medium. An aqueous dispersion was tested.

**Toxicity to algae**

1-Tetradecene  
Exposure time: 96 h  
Species: Selenastrum capricornutum (algae)  
Test substance: yes  
Method: OECD Test Guideline 201  
The product has low solubility in the test medium. An aqueous dispersion was tested.

**Biodegradability**  
According to the results of tests of biodegradability this product is considered as being readily biodegradable.

**Elimination information (persistence and degradability)**

**Mobility**

1-Tetradecene  
No data available

**Results of PBT assessment**

1-Tetradecene  
Non-classified PBT substance, Non-classified vPvB substance

**Additional ecological information**

**Ecotoxicology Assessment**

**Short-term (acute) aquatic hazard**

1-Tetradecene  
This material is not expected to be harmful to aquatic organisms.

**Long-term (chronic) aquatic hazard**

1-Tetradecene  
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

National legislation

Regulation under the Occupational Safety and Health Act
A Material Safety Datasheet (MSDS) for this product is not required according to article 41 of the ISHA.

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Chemical name</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmful Substances Prohibited from Manufacturing</td>
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<td></td>
</tr>
<tr>
<td>Harmful Substances Required Permission for Manufacture</td>
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<td></td>
</tr>
</tbody>
</table>

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

<table>
<thead>
<tr>
<th>Regulation</th>
<th>Chemical name</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Chemicals</td>
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</tr>
<tr>
<td>Prohibited Chemicals</td>
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</tr>
<tr>
<td>Observational chemicals</td>
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<tr>
<td>Restricted Chemicals</td>
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<td></td>
</tr>
<tr>
<td>Toxic Release Inventory</td>
<td>Not relevant</td>
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</tr>
</tbody>
</table>

Dangerous Substances Safety Management Act

Dangerous Substances: Flammable liquids, Type 3 petroleums, Water insoluble liquid
Safety Management Act

Notification status

Europe REACH: This product is in full compliance according to REACH regulation 1907/2006/EC.
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: On the inventory, or in compliance with the inventory
Japan ENCS: On the inventory, or in compliance with the inventory
Korea KECl: 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
AlphaPlus® 1-Tetradecene

Version 1.6
Revision Date 2019-11-14
Taiwan TCSI : On the inventory, or in compliance with the inventory

SECTION 16: Other information

Further information
Legacy SDS Number : PE0020

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 |
|-----------------------------|-----------------------------|-----------------------------|
| ACGIH | American Conference of Government Industrial Hygienists | LD50 | Lethal Dose 50% |
| AICS | Australia, Inventory of Chemical Substances | LOAEL | Lowest Observed Adverse Effect Level |
| DSL | Canada, Domestic Substances List | NFPA | National Fire Protection Agency |
| NDSL | Canada, Non-Domestic Substances List | NIOSH | National Institute for Occupational Safety & Health |
| CNS | Central Nervous System | NTP | National Toxicology Program |
| CAS | Chemical Abstract Service | NZIoC | New Zealand Inventory of Chemicals |
| EC50 | Effective Concentration | NOAEL | No Observable Adverse Effect Level |
| EC50 | Effective Concentration 50% | NOEC | No Observed Effect Concentration |
| EGEST | EOSCA Generic Exposure Scenario Tool | OSHA | Occupational Safety & Health Administration |
| EOSCA | European Oilfield Specialty Chemicals Association | PEL | Permissible Exposure Limit |
| EINECS | European Inventory of Existing Chemical Substances | PICCS | Philippines Inventory of Commercial Chemical Substances |
| MAK | Germany Maximum Concentration Values | PRNT | Presumed Not Toxic |
| GHS | Globally Harmonized System | RCRA | Resource Conservation Recovery Act |
| >= | Greater Than or Equal To | STEL | Short-term Exposure Limit |
| IC50 | Inhibition Concentration 50% | SARA | Superfund Amendments and Reauthorization Act. |
| IARC | International Agency for Research on Cancer | TLV | Threshold Limit Value |
| IECSC | Inventory of Existing Chemical Substances in China | TWA | Time Weighted Average |
| ENCS | Japan, Inventory of Existing and New Chemical Substances | TSCA | Toxic Substance Control Act |
| KECI | Korea, Existing Chemical Inventory | UVGB | Unknown or Variable Composition, Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials Information System |
| LC50 | Lethal Concentration 50% | | |

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