SAFETY DATA SHEET

AlphaPlus® 1-Tetradecene

Version 2.6
Revision Date 2018-08-02

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

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

EC-No. Registration number

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index No.</th>
<th>Legal Entity</th>
<th>Registration number</th>
</tr>
</thead>
</table>

Relevant Identified Uses: Manufacture
- Use as an intermediate
- Formulation
- Use in coatings – industrial
- Use in coatings – professional
- Use in Coatings - Consumer
- Use as a cleaning agent – industrial
- Use as a cleaning agent – professional
- Use as a cleaning agent – consumer
- Use in Oil and Gas field drilling and production operations - Industrial
- Use in Oil and Gas field drilling and production operations – Professional
- Lubricants - Industrial
- Lubricants - Professional
- Lubricants - Consumer
- Metal working fluids / rolling oils - Industrial
- Metal working fluids / rolling oils – Professional
- Functional Fluids - Industrial
- Functional Fluids - Professional
- Functional Fluids - Consumer
- Use in mining – industrial
- Use in polymer production – industrial

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

Local: Chevron Phillips Chemicals International N.V.

SDS Number: 100000067489 1/12
SECTION 2: Hazards identification

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Aspiration hazard, Category 1

H304: May be fatal if swallowed and enters airways.

Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms:

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
Hazardous ingredients which must be listed on the label:

- 1120-36-1 1-Tetradecene

**Additional Labeling:**
EUH066 Repeated exposure may cause skin dryness or cracking.
EUH066 Repeated exposure may cause skin dryness or cracking.

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No. Index No.</th>
<th>Classification</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Tetradecene</td>
<td>1120-36-1 214-306-9</td>
<td>Asp. Tox. 1; H304</td>
<td>94</td>
</tr>
<tr>
<td>2-Butyl-1-Decene</td>
<td>51655-65-3</td>
<td>Asp. Tox. 1; H304</td>
<td>2</td>
</tr>
<tr>
<td>2-Ethyl-1-Dodecene</td>
<td>19780-34-8</td>
<td>Asp. Tox. 1; H304</td>
<td>2</td>
</tr>
<tr>
<td>2-Hexyl-1-Octene</td>
<td>19780-80-4</td>
<td>Asp. Tox. 1; H304</td>
<td>1</td>
</tr>
</tbody>
</table>

Related Materials 1

For the full text of the H-Statements mentioned in this Section, see Section 16.

**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. Do not ingest. If swallowed then seek immediate medical assistance.

SECTION 5: Firefighting measures

Flash point: 107 °C (225 °F)
Autoignition temperature: 235 °C (455 °F)

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: 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.
A quantitative risk assessment is not required for the environment.
A quantitative risk assessment is not required for human health.

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.
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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

PNEC

Fresh water Value: 0,001 mg/l

Sea water Value: 0,001 mg/l

Fresh water sediment Value: 67,62 mg/kg

Sea sediment Value: 67,62 mg/kg

Soil Value: 13,5 mg/kg

Engineering measures

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:

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...
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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.

A quantitative risk assessment is not required for the environment.
A quantitative risk assessment is not required for human health.

### SECTION 9: Physical and chemical properties

**Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th><strong>Appearance</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form</strong></td>
</tr>
<tr>
<td><strong>Physical state</strong></td>
</tr>
<tr>
<td><strong>Color</strong></td>
</tr>
</tbody>
</table>

**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) |
AlphaPlus® 1-Tetradecene

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

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: 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.

**Acute inhalation toxicity**: LC₅₀: > 5 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: dust/mist
Method: Acute toxicity estimate
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.

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
No eye irritation
Information given is based on data obtained from similar substances.

Sensitization
Did not cause sensitization on laboratory animals.
Information given is based on data obtained from similar substances.

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

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
1-Tetradecene: LL50: > 1.000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
semi-static test Test substance: yes
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-Tetradecene: EL50: > 1.000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Test substance: yes
Method: OECD Test Guideline 202
The product has low solubility in the test medium. An aqueous dispersion was tested.

Toxicity to algae
1-Tetradecene: EL50: > 1.000 mg/l
Exposure time: 96 h
Species: Selenastrum capricornutum (algae)
static test Test substance: yes
Method: OECD Test Guideline 201
The product has low solubility in the test medium. An aqueous dispersion was tested.

Elimination information (persistence and degradability)

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

Ecotoxicology Assessment

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

Additional ecological information: No data available

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.

A quantitative risk assessment is not required for the environment. A quantitative risk assessment is not required for human health.

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

SECTION 15: Regulatory information

National legislation

Chemical Safety Assessment

Ingredients: tetradec-1-ene A Chemical Safety Assessment has been carried out for this substance.

Major Accident Hazard Legislation: 96/82/EC Update: 2003 Directive 96/82/EC does not apply

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 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: 0
Fire Hazard: 1
Reactivity Hazard: 0

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**

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

**Full text of H-Statements referred to under sections 2 and 3.**

**H304** May be fatal if swallowed and enters airways.