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

1.1

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

1.2

Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Uses: Manufacture
Supported Uses:
- 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

1.3

Details of the supplier of the safety data sheet

SDS Number: 100000067489
SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture
REGULATION (EC) No 1272/2008

Aspiration hazard, Category 1  H304: May be fatal if swallowed and enters airways.

2.2 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: 
AlphaPlus® 1-Tetradecene

SAFETY DATA SHEET
Version 2.7

Storage:
P331 Do NOT induce vomiting.
P405 Store locked up.
Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

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

3.1 - 3.2 Substance or Mixture
Synonyms:
- Tetradec-1-ene (C14H28)
- 1-Tetradecene (C14H28)
- NAO 14 (C14H28)

Molecular formula: C14H28

Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration [wt%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-Tetradecene</td>
<td>1120-36-1</td>
<td>Asp. Tox. 1; H304</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>214-306-9</td>
<td></td>
<td></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>
<tr>
<td>Related Materials</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1 Description of first-aid measures
SAFETY DATA SHEET

AlphaPlus® 1-Tetradecene

Version 2.7

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)

5.1 Extinguishing media

Unsuitable extinguishing media: High volume water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: Standard procedure for chemical fires.

5.3 Advice for firefighters

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

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment. Ensure adequate

SDS Number: 100000067489
6.2 Environmental precautions

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.

6.3 Methods and materials for containment and cleaning up

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.

6.4 Reference to other sections

Reference to other sections: For personal protection see section 8. For disposal considerations see section 13. 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

7.1 Precautions for safe handling

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.

7.2 Conditions for safe storage, including any incompatibilities

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

8.1 Control parameters

PNEC

Fresh water Value: 0.001 mg/l

Sea water Value: 0.001 mg/l
### 8.2 Exposure controls

#### 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. 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.

---

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

#### 9.1 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

10.1
Reactivity: Stable at normal ambient temperature and pressure.

10.2
Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3
Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions: Hazardous polymerization does not occur.

Further information: No decomposition if stored and applied as directed.

10.4
Conditions to avoid: No data available.

10.5
Materials to avoid: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

10.6
Hazardous decomposition products: No data available

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

SECTION 11: Toxicological information

11.1
Information on toxicological effects

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.

**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.

**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

- 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  
  Method: OECD Guideline 473  
  Result: negative

**Genotoxicity in vivo**
1-Tetradecene
- Test Type: Micronucleus test  
  Species: Mouse  
  Method: Mutagenicity (micronucleus test)  
  Result: negative

**Reproductive toxicity**
### AlphaPlus® 1-Tetradecene Safety Data Sheet

**AlphaPlus® 1-Tetradecene**

**Version 2.7**

**Revision Date** 2019-11-14

| 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

#### 12.1 Toxicity

**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.

12.2 **Persistence and degradability**

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

12.3 **Bioaccumulative potential**

Elimination information (persistence and degradability)

12.4 **Mobility in soil**

Mobility

1-Tetradecene : No data available

12.5 **Results of PBT and vPvB assessment**

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

12.6 **Other adverse effects**

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**

13.1 **Waste treatment methods**

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

14.1 - 14.7
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

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
National legislation

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

Major Accident Hazard Legislation: 96/82/EC  Update: 2003

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