

**AlphaPlus® 1-DODECENE**

Version 2.1

Revision Date 2019-10-01

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

Product Name : AlphaPlus® 1-DODECENE  
Material : 1087853, 1037008, 1015429, 1021778

**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**

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

**Classification**


: Flammable liquids, Category 4  
Aspiration hazard, Category 1

**Labeling**

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Symbol(s) : 

Signal Word : Danger

Hazard Statements : H227: Combustible liquid.  
H304: May be fatal if swallowed and enters airways.

Precautionary Statements : **Prevention:**  
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P280 Wear protective gloves/ 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 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Carcinogenicity:****IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**ACGIH**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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

Synonyms : NAO 12  
Dodecene-1 (C12)  
C12H24

Molecular formula : C12H24

Component	CAS-No.	Weight %
1-Dodecene	112-41-4	95 - 100

**SECTION 4: First aid measures**

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

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- sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.
- If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
- In case of skin contact : 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. 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 : 77 °C (171 °F)
- Autoignition temperature : 225 °C (437 °F)
- Suitable extinguishing media : Carbon dioxide (CO2).
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : 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. Keep away from open flames, hot surfaces and sources of ignition.

**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 : 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). Keep in suitable, closed containers for disposal.

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**SECTION 7: Handling and storage****Handling**

Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. 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. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. 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. 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 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

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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-resistant clothing. Footwear protecting against chemicals.

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 : Clear, colorless

**Safety data**

Flash point : 77 °C (171 °F)

Lower explosion limit : 0.6 %(V)

Upper explosion limit : 5.4 %(V)

Oxidizing properties : no

Autoignition temperature : 225 °C (437 °F)

Thermal decomposition : No data available

Molecular formula : C<sub>12</sub>H<sub>24</sub>

Molecular weight : 168.36 g/mol

pH : Not applicable

Freezing point : -35 °C (-31 °F)

Boiling point/boiling range : 213 °C (415 °F)

Vapor pressure : 19.30 Pa  
at 25 °C (77 °F)  
0.35 kPa  
at 65 °C (149 °F)

Relative density : 0.76  
at 15.6 °C (60.1 °F)

Density : 0.76 g/m<sup>3</sup>  
at 20 °C (68 °F)

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	762 kg/m <sup>3</sup> at 15 °C (59 °F)
	736 kg/m <sup>3</sup> at 50 °C (122 °F)
Water solubility	: Soluble in hydrocarbon solvents; insoluble in water.
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 0.68 cSt at 100 °C (212 °F)
Relative vapor density	: 5.81 (Air = 1.0)
Evaporation rate	: No data available

**SECTION 10: Stability and reactivity**

<b>Reactivity</b>	: No decomposition if stored and applied as directed.
<b>Chemical stability</b>	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
<b>Possibility of hazardous reactions</b>	
<b>Hazardous reactions</b>	: Further information: No decomposition if stored and applied as directed.  Hazardous reactions: Vapors may form explosive mixture with air.
<b>Conditions to avoid</b>	: Heat, flames and sparks.
<b>Materials to avoid</b>	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
<b>Thermal decomposition</b>	: No data available
<b>Other data</b>	: No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information****Acute oral toxicity**

1-Dodecene	: LD50: > 10,000 mg/kg Species: Rat Sex: male Method: Fixed Dose Method
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Information given is based on data obtained from similar substances.

**Acute inhalation toxicity**

1-Dodecene : Not classified due to data which are conclusive although insufficient for classification.

**Skin irritation**

1-Dodecene : No skin irritation

**Eye irritation**

1-Dodecene : No eye irritation  
Information given is based on data obtained from similar substances.

**Sensitization**

1-Dodecene : Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**

1-Dodecene : Species: Rat, Male and female  
Sex: Male and female  
Application Route: Oral diet  
Dose: 0, 100, 500, 1000 mg/kg  
Exposure time: 13 wk  
Number of exposures: daily  
NOEL: 1,000 mg/kg  
Method: OCED Guideline 408  
Information given is based on data obtained from similar substances.

Species: Rat, Male and female  
Sex: Male and female  
Application Route: Inhalation  
Dose: 0, 300, 1000, 3000 ppm  
Exposure time: 13 wk  
Number of exposures: 6 hrs/d, 5 d/wk  
NOEL: 3000 ppm  
Method: OECD Guideline 413  
Information given is based on data obtained from similar substances.

**Genotoxicity in vitro**

1-Dodecene : Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Guideline 473  
Result: negative

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**Reproductive toxicity**

1-Dodecene : Species: Rat  
Sex: male  
Application Route: Oral diet  
Dose: 0, 100, 500, or 1000 mg/kg  
Exposure time: 44 D  
Number of exposures: daily  
Method: OECD Guideline 421  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg

Species: Rat  
Sex: female  
Application Route: Oral diet  
Dose: 0, 100, 500, or 1000 mg/kg  
Exposure time: 41-55 D  
Number of exposures: daily  
Method: OECD Guideline 421  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg

**Aspiration toxicity**

1-Dodecene : May be fatal if swallowed and enters airways.

**CMR effects**

1-Dodecene : Carcinogenicity: Not available  
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
Teratogenicity: Not available  
Reproductive toxicity: Animal testing did not show any effects on fertility.

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

**SECTION 12: Ecological information****Toxicity to fish**

1-Dodecene : No toxicity at the limit of solubility.

**Toxicity to daphnia and other aquatic invertebrates**

1-Dodecene : No toxicity at the limit of solubility.

**Toxicity to algae**

1-Dodecene : No toxicity at the limit of solubility.

Biodegradability



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1-Dodecene	: 74.1 - 80 % Testing period: 28 d Method: OECD Test Guideline 301 This material is expected to be readily biodegradable.
Bioaccumulation	
1-Dodecene	: No data available
Mobility	
1-Dodecene	: No data available
Results of PBT assessment	
1-Dodecene	: Non-classified PBT substance, Non-classified vPvB substance
Additional ecological information	: No data available
<b>Ecotoxicology Assessment</b>	
Short-term (acute) aquatic hazard	
1-Dodecene	: 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. 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.

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**US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)**

UN3295, HYDROCARBONS, LIQUID, N.O.S., COMBUSTIBLE LIQUID, III

**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

<b>Other information</b>	<b>: 1-Dodecene, S.T. 2, Cat. Y</b>
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**SECTION 15: Regulatory information****National legislation**

<b>SARA 311/312 Hazards</b>	: Flammable (gases, aerosols, liquids, or solids) Aspiration hazard
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CERCLA Reportable Quantity	: This material does not contain any components with a CERCLA RQ.
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SARA 302 Reportable Quantity	: This material does not contain any components with a SARA 302 RQ.
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- SARA 302 Threshold Planning Quantity : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.
- SARA 313 Components : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

- Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

- : 1-Dodecene - 112-41-4

**US State Regulations**

- Pennsylvania Right To Know : No components are subject to the Pennsylvania Right to Know Act.
- New Jersey Right To Know : No components are subject to the New Jersey Right to Know Act.
- California Prop. 65 Components : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**Notification status**

- Europe REACH : This product is in full compliance according to REACH

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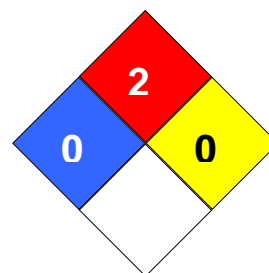
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Switzerland CH INV	:	regulation 1907/2006/EC.
United States of America (USA) TSCA	:	On the inventory, or in compliance with the inventory
Canada DSL	:	On or in compliance with the active portion of the TSCA inventory
Australia AICS	:	All components of this product are on the Canadian DSL
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	:	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.
China IECSC	:	
Taiwan TCSI	:	

**SECTION 16: Other information**

**NFPA Classification** : Health Hazard: 0  
Fire Hazard: 2  
Reactivity Hazard: 0

**Further information**

Legacy SDS Number : PE0019

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

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			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	UVCB	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%		