AlphaPlus® 1-Hexadecene

according to GB/T 16483 and GB/T 17519

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

Product information

Product Name	:	AlphaPlus® 1-Hexadecene
Material	:	1128490, 1076762, 1037049, 1037048

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
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
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)
Belgium: 070 245 245 (24 hours/day, 7 days/week)
Bulgaria: +359 2 9154 233
Croatia: +3851 2348 342 (24 hours/day, 7 days/week)
Cyprus: 1401
Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402
Denmark: Danish Poison Center (Giftlinjen): +45 8212 1212
Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Finland: 0800 147 111 09 471 977 (24 hours/day)
France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)
Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Greece: (0030) 2107793777 (24 hours/day, 7 days/week)
Hungary: +36-80-201-199 (24 hours/day, 7 days/week)
Iceland: 543 2222 (24 hours/day, 7 days/week)
Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371 67042473. (24 hours.)
Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Lithuania: +370 (85) 2362052

Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)
Malta: +356 2395 2000
The Netherlands: NVIC: +31 (0)88 755 8000
Norway: 22 59 13 00 (24 hours/day, 7 days/week)
Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Portugal: CIAV phone number: +351 800 250 250
Romania: +40213183606
Slovakia: +421 2 5477 4166
Slovenia: Phone number: 112
Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)
Sweden: 112 – ask for Poisons Information

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 : Causes mild skin irritation. May be fatal if swallowed and enters airways.

Classification

: Skin corrosion/irritation, Category 3
Aspiration hazard, Category 1

Labeling

Symbol(s) :

Signal Word : Danger

Hazard Statements : H304: May be fatal if swallowed and enters airways.
H316: Causes mild skin irritation.

Precautionary Statements : **Response:**
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331: Do NOT induce vomiting.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
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. 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 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 fire fighting	:	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.
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

Not applicable

Engineering measures

Adequate ventilation to control airborned 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	:	If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that provides protection may be appropriate, such as:. Air-Purifying Respirator for Dusts and Mists / P100. A positive pressure, air-supplying respirator may be appropriate if there is potential for uncontrolled release, aerosolization, 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:. 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

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 : 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/lExposure 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.

AlphaPlus® 1-Hexadecene
Skin irritation : 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.

AlphaPlus® 1-Hexadecene
Eye irritation : Vapors may cause irritation to the eyes, respiratory system and the skin.

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

Test Type: Mammalian cell gene mutation assay
Metabolic activation: with and without metabolic activation
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- 51days
Method: OECD Guideline 422
NOAEL Parent: 1000 mg/kg bwday
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)
static test 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)
static test 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.

No data available

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.

Other information	**:**	**OLEFINS (C13 +, all isomers), S.T. 2, Cat.Y**

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

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	:	On the inventory, or in compliance with the inventory
Australia AIIC	:	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 or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).
Philippines PICCS	:	On the inventory, or in compliance with the inventory
Taiwan TCSI	:	On the inventory, or in compliance with the inventory
China IECSC	:	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.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AIIC	Australian Inventory of Industrial Chemicals	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	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%	ATE	Acute toxicity estimate