

AlphaPlus® 1-Decene

Version 1.4

Revision Date 2019-10-11

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-Decene
Material : 1095875, 1068252, 1037000, 1015428, 1036999

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****Globally Harmonized System of Classification and Labeling of Chemicals (GHS)****Emergency Overview****Danger****Form:** Liquid **Physical state:** Liquid **Color:** Clear, colorless

Hazards : Flammable liquid and vapor. Causes mild skin irritation. May be fatal if swallowed and enters airways. Very toxic to aquatic life.

Classification

: Flammable liquids, Category 3

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Skin irritation, Category 3
 Aspiration hazard, Category 1
 Short-term (acute) aquatic hazard, Category 1

Labeling

Symbol(s)



Signal Word

: Danger

Hazard Statements

: H226: Flammable liquid and vapor.
 H304: May be fatal if swallowed and enters airways.
 H316: Causes mild skin irritation.
 H400: Very toxic to aquatic life.

Precautionary Statements

: **Prevention:**
 P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
 P233: Keep container tightly closed.
 P240: Ground/bond container and receiving equipment.
 P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242: Use only non-sparking tools.
 P243: Take precautionary measures against static discharge.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
 P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
 P303 + P361 + P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P331: Do NOT induce vomiting.
 P332 + P313: If skin irritation occurs: Get medical advice/ attention.
 P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P391: Collect spillage.
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.

SECTION 3: Composition/information on ingredients

Synonyms

: Decene-n-1
 NAO 10
 Decene-1 (C10)
 (C10 H20)

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Molecular formula : C₁₀H₂₀

Chemical name	CAS-No. / EINECS-No.	Concentration [wt%]
1-Decene	872-05-9	96 - 100
2-Butyl-1-Hexene	6795-79-5	1 - 5
2-Ethyl-1-Octene	51655-64-2	1 - 5

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 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. Do NOT induce vomiting. Do not give milk or alcoholic beverages. 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 : 49 °C (120 °F)
- Autoignition temperature : 210 °C (410 °F)
- Suitable extinguishing media : Alcohol-resistant foam. Carbon dioxide (CO₂). Dry chemical.
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.

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- Fire and explosion protection : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.
- Hazardous decomposition products : Carbon oxides.

SECTION 6: Accidental release measures

- Personal precautions : Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- 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).

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. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. 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. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). 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. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

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SECTION 8: Exposure controls/personal protection**Personal protective equipment**

- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.
- 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 : 49 °C (120 °F)
- Lower explosion limit : 0.7 %(V)
- Upper explosion limit : 5.9 %(V)
- Oxidizing properties : no
- Autoignition temperature : 210 °C (410 °F)
- Thermal decomposition : No data available
- Molecular formula : C₁₀H₂₀
- Molecular weight : 140.3 g/mol
- pH : Not applicable
- Freezing point : -66 °C (-87 °F)
- Pour point : No data available
- Boiling point/boiling range : 170.56 °C (339.01 °F)
- Vapor pressure : 0.21 kPa
at 25 °C (77 °F)

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	2.30 kPa at 65 °C (149 °F)
Relative density	: 0.75 at 15.6 °C (60.1 °F)
Density	: 745 kg/m ³ at 15 °C (59 °F)
	740 kg/m ³ at 20 °C (68 °F)
	717 kg/m ³ at 50 °C (122 °F)
Water solubility	: Soluble in hydrocarbon solvents; insoluble in water.
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 1.1 cSt at 20 °C (68 °F)
Relative vapor density	: 4.84 (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	
Hazardous reactions	: Hazardous reactions: Hazardous polymerization does not occur. Further information: No decomposition if stored and applied as directed. Hazardous reactions: Vapors may form explosive mixture with air.
Conditions to avoid	: Heat, flames and sparks.
Materials to avoid	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Thermal decomposition	: No data available
Hazardous decomposition products	: Carbon oxides

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

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

1-Decene : LD50: > 3,575 mg/kg
Species: Rat
Sex: male and female
Method: Fixed Dose Method
Information given is based on data obtained from similar substances.

Acute inhalation toxicity

1-Decene : LC50: > 2.1 mg/l
Exposure time: 4 h
Species: Rat
Sex: male and female
Method: OECD Test Guideline 403
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

1-Decene : LD50: > 2,000 mg/kg
Species: Rat
Sex: male and female
Method: OECD Test Guideline 402
Information given is based on data obtained from similar substances.

Skin irritation

1-Decene : Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin.

Eye irritation

1-Decene : No eye irritation

Sensitization

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

Repeated dose toxicity

1-Decene : Species: Rat, Male and female
Sex: Male and female
Application Route: Oral
Dose: 0, 100, 500, 1000 mg/kg
Exposure time: 13 wks

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Number of exposures: 7 d/wk
 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 wks
 Number of exposures: 6 hr/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-Decene

: 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
 Metabolic activation: with and without metabolic activation
 Method: OECD Guideline 473
 Result: negative

Genotoxicity in vivo

1-Decene

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

Reproductive toxicity

1-Decene

: Species: Rat
 Sex: male
 Application Route: Oral diet
 Dose: 0, 100, 500, 1000 mg/kg
 Method: OECD Guideline 421
 NOAEL Parent: 1,000 mg/kg
 NOAEL F1: 1,000 mg/kg

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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.

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CMR effects

1-Decene : Carcinogenicity: Not available
 Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
 Teratogenicity: Animal testing did not show any effects on fetal development.
 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-Decene : LC50: 0.12 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 semi-static test Method: OECD Test Guideline 203
 Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates

1-Decene : EC50: 0.56 - 1 mg/l
 Exposure time: 48 h
 Species: Daphnia
 Method: OECD Test Guideline 202

Toxicity to algae

1-Decene : EC50: 1 - 1.8 mg/l
 Exposure time: 72 h
 Species: Pseudokirchneriella subcapitata (microalgae)
 Method: OECD Test Guideline 201

M-Factor

dec-1-ene : M-Factor (Acute Aquat. Tox.) 1
 M-Factor (Chron. Aquat. Tox.) 1

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

1-Decene : NOEC: 0.0194 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 Analytical monitoring: yes
 Test substance: yes
 Method: OECD Test Guideline 211

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Biodegradability : This material is expected to be readily biodegradable.

Elimination information (persistence and degradability)

Bioaccumulation

1-Decene : No data available

Mobility

1-Decene : No data available

Results of PBT assessment

1-Decene : Non-classified PBT substance, Non-classified vPvB substance

Additional ecological
information

: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

1-Decene : Very toxic to aquatic life.

Long-term (chronic) aquatic hazard

1-Decene : Very toxic to aquatic life with long lasting effects.

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 : The product should not be allowed to enter drains, water courses or the soil. 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

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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)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, III, (49 °C), MARINE POLLUTANT, (1-DECENE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS, (1-DECENE)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, III, ENVIRONMENTALLY HAZARDOUS, (1-DECENE)

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, III, ENVIRONMENTALLY HAZARDOUS, (1-DECENE)

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

Other information	: Decene (N), S. T. 2, CAT. X
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SECTION 15: Regulatory information

Classification and Labeling of
Commonly Used Dangerous
Chemical Substances : Primary label: Combustible Liquid.

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

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	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

SECTION 16: Other information**Further information**

Legacy SDS Number : PE0018

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

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			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%		