

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Inter- nal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AlphaPlus® 1-Hexene

Material : 1128498, 1117427, 1088135, 1081271, 1084562, 1070002,
1025308, 1017828, 1032321, 1017829, 1028630, 1026835,
1028342, 1011442, 1026834, 1015415

Product code : 000000000000000000 000000000000000000

Recommended use of the chemical and restrictions on use

Recommended use : Commercial Product

Restrictions on use : None known.

Manufacturer or supplier's details

Address : Chevron Phillips Chemical Company LP
Normal Alpha Olefins (NAO)
9500 Lakeside Blvd.
The Woodlands, TX 77381

Address : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.
C/O DONG WOO CORPORATION
#B-2601, JEONGJAIL-RO,
BUNDANG-GU, SEONGNAMI-SI,
GYEONGGI-DO, 13557
SOUTH KOREA
Telephone no.: +612-9186-1132

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)

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Inter-)	MSDS number: AA00974-0000000098
1.19	2026-07-20	nal):	Date of last issue: 2024-01-17
		100000068730	Date of first issue: 2009-10-27

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: POISON CENTER MILAN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico “Agostino Gemelli”, Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726; POISON CENTER ROME – Policlinico “Umberto I” Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera “Antonio Cardarelli” Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera “Papa Giovanni XXIII” Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858;
 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

Organization that prepared the SDS : Product Safety and Toxicology Group
 E-mail address : SDS@CPChem.com
 Website : www.CPChem.com
 Appointees : 회사명: 리이치 24 시코리아(주).
 주소: 서울시 서초구 헌릉로 7,
 외국기업창업지원연구센터
 (IKP) 908-909호
 전화: +82-1067838981

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 2

Aspiration hazard : Category 1

Specific Target Organ Toxicity : Category 3 (Narcotic effects)

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H336 May cause drowsiness or dizziness.

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.
P261 Avoid breathing mist or vapors or spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.

Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

P331 Do NOT induce vomiting.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container according to waste-related laws

Additional Labeling

The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 100 %

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 1 %

Other hazards which do not result in classification

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS**Components**

Chemical name	Common Name	CAS-No.	Concentration (% w/w)
1-Hexene	hex-1-ene	592-41-6	>= 95 - <= 100
n-hexane	n-hexane	110-54-3	>= 0.3 - < 1

None

None

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.
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.
In case of skin contact	: If on skin, rinse well with water.

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Inter- nal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

If inhaled	: If on clothes, remove clothes. If unconscious, place in recovery position and seek medical advice.
If swallowed	: If symptoms persist, call a physician. 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.
Most important symptoms and effects, both acute and delayed	: None known.
Notes to physician	: Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable and unsuitable extinguishing media**

Suitable extinguishing media	: Alcohol-resistant foam Carbon dioxide (CO ₂) 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.
Specific extinguishing methods	: 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.
Special protective equipment for fire-fighters	: Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: 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.
---	---

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Inter-)	MSDS number: AA00974-0000000098
1.19	2026-07-20	nal):	Date of last issue: 2024-01-17
		100000068730	Date of first issue: 2009-10-27

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 and materials for containment and 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).

7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
Use only explosion-proof equipment.
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient. Review all operations, which have the potential to generating and accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106 "Flammable and Combustible Liquids"; National Fire Protection Association (NFPA 77), "Recommended Practice on Static Electricity"; and/or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and stray Currents".
Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
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.
Container may be opened only under exhaust ventilation hood.

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

Conditions for safe storage : Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

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.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1-Hexene	592-41-6	TWA	50 ppm	ACGIH
1-Hexene	592-41-6	TWA	50 ppm	ACGIH
n-hexane	110-54-3	TWA	50 ppm	KR OEL
Further information: Suspected human reproductive toxicant, Substances designated by 'Skin' may be absorbed into the blood-stream through the skin, mucous membrane and eye and contribute to the overall effect. (Skin notation does not apply to the skin irritant)				
		TWA	50 ppm	KR PEL
		TWA	50 ppm	ACGIH

Other ingredients, which are listed in section 3 but not listed in this section, do not have established occupational exposure limit values.

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
n-hexane	110-54-3	2,5-Hexanedi-one	Urine	End of shift	0.5 mg/l	ACGIH BEI

Engineering measures : Adequate ventilation to control airborne 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 pre-

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

vent 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. Among the following personal protective equipment, the PPEs which require safety certification need to be certified by KOSHA.

- 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 Organic Vapors
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.
- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
- Hand protection
- Remarks : 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.
- 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 retardant antistatic protective clothing.
Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Color	:	Clear, colorless
Odor	:	No information available.
Odor Threshold	:	No data available
pH	:	Not applicable
Pour point	:	No data available
Melting point/freezing point	:	-140 °C
Boiling point/boiling range	:	63.5 °C
Flash point	:	-26 °C
		Method: closed cup
Evaporation rate	:	No data available
Self-ignition	:	272 °C
Upper explosion limit / Upper flammability limit	:	Upper flammability limit 7 %(V)
Lower explosion limit / Lower flammability limit	:	Lower flammability limit 2 %(V)
Vapor pressure	:	176 MMHG (24 °C)
		106.3 kPa (65 °C)
Solubility(ies)		
Water solubility	:	47 MG/L slightly soluble (20 °C)
Relative vapor density	:	2.9 (Air = 1.0)
Relative density	:	0.68 (15 °C)
		0.683 (10 °C)
		0.673 (20 °C)
		0.645 (50 °C)
		0.640 (55 °C)
Density	:	645 kg/m3 (50 °C)

SAFETY DATA SHEET

**AlphaPlus® 1-Hexene**

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

678 kg/m³ (15 °C)674 g/cm³ (20 °C)

Partition coefficient: n-octanol/water : log Pow: 3.87
Decomposition temperature : No data available

Viscosity
Viscosity, kinematic : 0.34 cSt (40 °C)

Oxidizing properties : no

Molecular weight : 84.18 g/mol

10. STABILITY AND REACTIVITY

Chemical stability and possibility of hazardous reactions : 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:
No decomposition if stored and applied as directed.
Possibility of hazardous reactions:
Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.
Incompatible materials : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous decomposition products : Carbon oxides

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data available

Health hazard information**Acute toxicity****Product:**

Acute oral toxicity : LD50 (Rat, male and female): > 5,600 mg/kg
Method: Acute toxicity estimate

Acute inhalation toxicity : Remarks: No data available

SDS Number:100000068730

10/27

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Acute dermal toxicity : LD50 Dermal (Rabbit): > 3,500 mg/kg
Method: Acute toxicity estimate

Components:**1-Hexene:**

Acute oral toxicity : LD50 (Rat, male and female): > 5,600 mg/kg
Method: Fixed Dose Method
GLP: yes
Assessment: Not harmful

Acute inhalation toxicity : LC50 (Rat, male): 110.1 mg/l, 32000 ppm
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
GLP: yes
Assessment: 0 - Not toxic

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
GLP: yes
Assessment: Not harmful

n-hexane:

Acute oral toxicity : LD50 (Rat, male and female): 16 g/kg
Assessment: Not harmful

Acute inhalation toxicity : LC50 (Rat, male): 73860 ppm
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Assessment: 0 - Not toxic
Remarks: Information given is based on data obtained from similar substances.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3,350 mg/kg
Assessment: Not harmful
Remarks: Information given is based on data obtained from similar substances.

Skin corrosion/irritation**Product:**

Remarks : No 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-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Components:**1-Hexene:**

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
GLP	:	yes
Remarks	:	Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of the skin.

n-hexane:

Species	:	Rabbit
Result	:	Irritating to skin.

Serious eye damage/eye irritation**Product:**

Remarks	:	No eye irritation
---------	---	-------------------

Components:**1-Hexene:**

Species	:	Rabbit
Result	:	No eye irritation
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405
GLP	:	yes

n-hexane:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitization**Skin sensitization**

Did not cause sensitization on laboratory animals.

Product:

Result	:	No data available
--------	---	-------------------

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Components:**1-Hexene:**

Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Did not cause sensitization on laboratory animals.
GLP	: yes

n-hexane:

Species	: Mouse
Result	: Did not cause sensitization on laboratory animals.

Species	: human
Result	: Does not cause skin sensitization.

Carcinogenicity**Components:****1-Hexene:**

No data available

Carcinogenicity - Assessment	: Not available
------------------------------	-----------------

n-hexane:

Not applicable

Species	: Rat
Application Route	: Inhalation
Exposure time	: 2 yrs
Dose	: 0.043, 900, 3,000, 9,016 ppm
Frequency of Treatment	: 6 h/d, 5 d/wk
Remarks	: No evidence of carcinogenicity Information given is based on data obtained from similar substances.

Species	: Mouse, male and female
Application Route	: Inhalation
Exposure time	: 2 yrs
Dose	: 0.039, 900, 3,000, 9,018 ppm
Frequency of Treatment	: 6 h/d, 5 d/wk
	: 3,000
	: 9,018
Remarks	: No evidence of carcinogenicity Information given is based on data obtained from similar substances.

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Inter- nal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

Germ cell mutagenicity**Components:****1-Hexene:**

Not applicable

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Escherichia coli - reverse mutation assay)
Result: negative
GLP: yes
Test substance: yes

Test Type: Unscheduled DNA synthesis assay
Result: negative
GLP: yes
Test substance: yes

Test Type: Mouse lymphoma assay
Result: negative
GLP: yes
Test substance: yes

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

Genotoxicity in vivo : Test Type: Mouse micronucleus assay
Species: Mouse
Method: Mutagenicity (micronucleus test)
Result: negative
GLP: yes
Test substance: yes

Germ cell mutagenicity- Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

n-hexane:

No data available

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

Method: OECD Test Guideline 471
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: Positive results were obtained in some in vitro tests.

Genotoxicity in vivo : Test Type: Dominant lethal assay
Species: Mouse (male)
Dose: 100 and 400 ppm
Result: negative

Test Type: Cytogenetic assay
Species: Rat (male and female)
Dose: 900, 3000, 9000 ppm
Result: negative

Germ cell mutagenicity- Assessment : Did not show mutagenic effects in animal experiments.

Reproductive toxicity**Components:****1-Hexene:**

No data available

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.
Animal testing did not show any effects on fetal development.

n-hexane:

Suspected of damaging fertility or the unborn child.

According to Ministry of Employment and Labor Public Notice: Category 2

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.
Animal testing did not show any effects on fetal development.

STOT-single exposure**Product:**

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Remarks : Not classified due to data which are conclusive although insufficient for classification.

Components:**n-hexane:**

Assessment : May cause drowsiness or dizziness.

STOT-repeated exposure**Product:**

Remarks : Not classified due to data which are conclusive although insufficient for classification.

Components:**n-hexane:**

Routes of exposure : Inhalation
Target Organs : Nervous system
Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Components:****1-Hexene:**

Species : Rat, male
NOAEL : 101 mg/kg
LOAEL : 1,010 mg/kg
Application Route : oral gavage
Exposure time : 28 day
Number of exposures : daily
Dose : 0, 10, 101, 1010, 3365 mg/kg
Method : OECD Test Guideline 407
Test substance : yes
GLP : yes
Symptoms : Irritation of the gastric mucosa, Body weight depression

Species : Rat, female
NOAEL : 1,010 mg/kg
LOAEL : 3,365 mg/kg
Application Route : oral gavage
Exposure time : 28 day
Number of exposures : daily
Dose : 0, 10, 101, 1010, 3365 mg/kg
Method : OECD Test Guideline 407

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Test substance : yes
GLP : yes
Symptoms : Irritation of the gastric mucosa, Body weight depression

Species : Rat
NOAEL : 3000 ppm
Application Route : Inhalation
Exposure time : 90 day
Number of exposures : 6 h/d, 5 d/wk, 13 wk
Dose : 0, 300, 1000, 3000 ppm
Test substance : yes
GLP : yes
Symptoms : Body weight depression

n-hexane:

Species : Rat, male
LOAEL : 3,000 ppm
Application Route : Inhalation
Exposure time : 16 wks
Number of exposures : 12 h/d
Dose : 3,000 ppm
Target Organs : Peripheral nervous system

Species : Mouse, female
LOAEL : 500 ppm
Application Route : Inhalation
Exposure time : 13 wks
Number of exposures : 6h or 22h (1,000 ppm)/ 5d/wk
Dose : 500, 1,000, 4,000, 10,000 ppm
Target Organs : Nose

Species : Mouse, male
NOAEL : 500 ppm
LOAEL : 1,000 ppm
Application Route : Inhalation
Exposure time : 13 wks
Number of exposures : 6h or 22h (1,000 ppm)/d, 5d/wk
Dose : 500, 1,000, 4000, 10,000 ppm
Target Organs : Nose

Species : Rat, male
NOAEL : 568 mg/kg bw/day
LOAEL : 1135 mg/kg bw/day
Application Route : oral gavage
Exposure time : 90 or 120 days
Number of exposures : Daily or 5d/wk (120-d study)
Dose : 568, 1,135, 3,973 mg/kg bw/day
Symptoms : Body weight depression

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Aspiration toxicity**Product:**

May be fatal if swallowed and enters airways.

Components:**1-Hexene:**

May be fatal if swallowed and enters airways.

n-hexane:

May be fatal if swallowed and enters airways.

Experience with human exposure**Components:****n-hexane:**

Inhalation : Target Organs: Peripheral nervous system
Symptoms: see user defined free text

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks : Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:****Ecotoxicology Assessment**

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : No data available

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Further information

The following percentage of the mixture consists of ingredient(s) with unknown hazards to the aquatic environment: 1 %

Components:**1-Hexene:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 5.6 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: yes
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 4.4 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: no
Method: OECD Test Guideline 202
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): 1.8 mg/l
Exposure time: 96 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

EC50 (Pseudokirchneriella subcapitata (green algae)): > 5.5 mg/l
Exposure time: 96 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : No data available

n-hexane:

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 12.51 mg/l
Exposure time: 96 h
Method: QSAR modeled data

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 21.85 mg/l
Exposure time: 48 h
Method: QSAR modeled data

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): 9.29 mg/l
Exposure time: 72 h
Method: QSAR modeled data

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Persistence and degradability**Product:**

Biodegradability : Remarks: This material is expected to be readily biodegradable.

Components:**1-Hexene:**

Biodegradability : Biodegradation: 67 - 98 %
Exposure time: 28 d
Test substance: yes
Remarks: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

n-hexane:

Biodegradability : Remarks: This material is expected to be readily biodegradable.

Bioaccumulative potential**Product:**

Bioaccumulation : Remarks: This material is not expected to bioaccumulate.

Components:**1-Hexene:**

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

Bioaccumulation : Remarks: This material is not expected to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3.87

n-hexane:

Bioaccumulation : Bioconcentration factor (BCF): 501
Remarks: Does not significantly accumulate in organisms.

Mobility in soil**Product:**

Mobility : Remarks: No data available

Components:**1-Hexene:**

Mobility : Remarks: No data available

n-hexane:

Mobility : Method: Calculation, Mackay Level III Fugacity Model
Remarks: The product will be dispersed amongst the various environmental compartments (soil/ water/ air).

Other adverse effects**Product:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

Components:**1-Hexene:**

Results of PBT and vPvB assessment : Non-classified PBT substance
Non-classified vPvB substance

n-hexane:

Results of PBT and vPvB assessment : Non-classified vPvB substance
Non-classified PBT substance

Endocrine disrupting properties

No data available

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : 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.

Disposal precautions

Dispose of contents and container according to wastes control act.

14. TRANSPORT INFORMATION**International Regulations**

Remarks : Hexene (all isomers), S.T.3., Cat. Y

IATA-DGR

UN/ID No. : UN 2370
Proper shipping name : 1-Hexene
Class : 3
Packing group : II
Labels : Class 3 - Flammable Liquid
Packing instruction (cargo aircraft) : 307
Remarks : Hexene (all isomers), S.T.3., Cat. YANTT (National Land Transportation Agency)
UN2370, 1-HEXENE, 3, II, (-26°C)

IMDG-Code

UN number : UN 2370
Proper shipping name : 1-HEXENE
Class : 3
Packing group : II
Labels : 3
EmS Code : F-E, S-D
Marine pollutant : no
Remarks : Hexene (all isomers), S.T.3., Cat. Y
ANTT (National Land Transportation Agency)
UN2370, 1-HEXENE, 3, II, (-26°C)

Maritime transport in bulk according to IMO instruments

II - Hazardous Properties

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

Domestic regulation

Refer to section 15 for specific national regulation.

Special precautions for user

Remarks : UN2370

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION**National regulatory information****Regulation under the Occupational Safety and Health Act****Harmful Substances Prohibited from Manufacturing**

Not applicable

Harmful Substances Required Permission for Manufacture

Not applicable

Harmful Agents to be kept below Occupational Exposure Limits

Chemical name	CAS-No.
n-Hexane	110-54-3

Harmful Agents Required to be kept below Permission Levels

Chemical name	CAS-No.
n-Hexane	110-54-3

Hazardous substances requiring management

Chemical name	CAS-No.	Threshold limits (%)
n-Hexane	110-54-3	≥ 1 %

Special Management Materials

Not applicable

Controlled Substances Subject to Environment Monitoring

Not applicable

Controlled Substances Subject to Health Examination

Not applicable

Hazardous Substances Subject to Process Safety Management (PSM) Reporting Obligation

Chemical name/Classification	Manufacturing or handling quantity	Storage quantity
Flammable liquids	5,000 kg	200,000 kg

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

K-OSHA Hazardous Substances (Occupational Safety and Health Regulations, Table 1)

Category
Flammable liquid

K-OSHA Hazardous Substances (Occupational Safety and Health Regulations, Table 9)

Category	Manufacturing or handling quantity
Flammable liquid	400 liter

Regulation under the Chemicals Control Act**Toxic Chemicals**

Not applicable

Restricted Chemicals

Not applicable

Prohibited Chemicals

Not applicable

Toxic Release Inventory

Not applicable

Accident Precaution Chemicals

Not applicable

Chemicals of Acute and Chronic Hazard to Human Health and the Environment**Substances Acutely hazardous to humans**

Not applicable

Substances Chronically hazardous to humans

Not applicable

Substances Hazardous to the environment

Not applicable

Accident Precaution Chemicals

Not applicable

Toxic Release Inventory

Not applicable

Act on Registration and Evaluation of Chemical Substances (K-REACH)**Restricted Chemicals**

Not applicable

Prohibited Chemicals

Not applicable

Substances with Unconfirmed Hazards

Not applicable

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

Dangerous Substances Safety Management Act

Classification : Group 4, Flammable liquids, Type 1 petroleums, Water insoluble liquid

Hazard rank : Hazardous rank II

Designated Quantity : 200 liter

Safety Warning : Keep away from fire

Waste Control Act

Industrial waste
Follow article 13 of the act to dispose the product waste

Industrial general wastes
Follow article 13 of the act to dispose the product waste

Other requirements in domestic and other countries**The ingredients of this product are reported in the following inventories:**

EU REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.

CH INV : On the inventory, or in compliance with the inventory

TSCA : On or in compliance with the active portion of the TSCA inventory

DSL : All components of this product are on the Canadian DSL

AU AIIC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

TW TCSI : On the inventory, or in compliance with the inventory

KECI : All substances in this product were registered, notified to be registered, or exempted from registration by CPChem through an Only Representative according to K-REACH regulations. Importation of this product is permitted if the Korean Importer of Record was included on CPChem's notifications or if the Importer of Record themselves notified the substances.

IECSC : On the inventory, or in compliance with the inventory

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

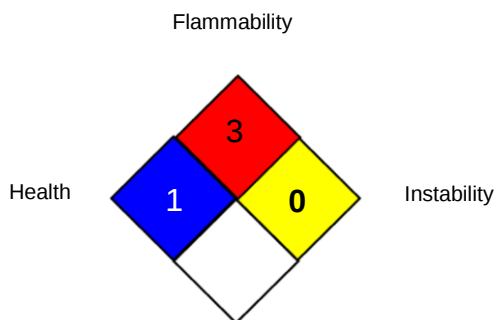
Version	Revision Date:	SDS Number (Internal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17
			Date of first issue: 2009-10-27

16. OTHER INFORMATION**Further information**

Issuing date : 2009-10-27

Revision number and date

Number of Revision : 1.19
Revision Date : 2026-07-20
Other information : None.
Date format : yyyy/mm/dd

NFPA:**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
KR OEL : Harmful Agents to be kept below Occupational Exposure Limits
KR PEL : Harmful Agents Required to be kept below Permission Levels
ACGIH / TWA : 8-hour, time-weighted average
KR OEL / TWA : Time Weighted Average
KR PEL / TWA : TWA

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule;

AlphaPlus® 1-Hexene

Version 1.19

Revision Date 2026-07-20

Version	Revision Date:	SDS Number (Inter- nal):	MSDS number: AA00974-0000000098
1.19	2026-07-20	100000068730	Date of last issue: 2024-01-17 Date of first issue: 2009-10-27

ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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.

KR / EN