

AlphaPlus® 1-DODECENE

Version 2.2

Revision Date 2026-08-03

Version	Revision Date:	SDS Number (Internal):	Date of last issue: 2026-01-14	MSDS number: N/A
2.2	2026-08-03	100000068203	Date of first issue: 2009-10-27	

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AlphaPlus® 1-DODECENE

Material : 1128424, 1087853, 1037008, 1015429, 1021778

Product code : 000000000000000000 000000000000000000

Recommended use of the chemical and restrictions on use

Recommended use : Intermediate

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,
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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)

France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)

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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
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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 한릉로 7,
외국기업창업지원연구센터
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2. HAZARDS IDENTIFICATION**GHS Classification**

Aspiration hazard : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

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

Precautionary Statements : **Response:**
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

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-Dodecene	dodec-1-ene	112-41-4	>= 90 - < 95
1-Dodecene	dodec-1-ene	112-41-4	>= 90 - < 95
1-Tetradecene	tetradec-1-ene	1120-36-1	>= 1 - < 2.5
Dodecane	dodecane	112-40-3	>= 0.25 - < 1

4. FIRST AID MEASURES

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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. If on clothes, remove clothes.
If inhaled	: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
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.
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 : 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.

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.

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6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : 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 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).
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Keep away from open flames, hot surfaces and sources of ignition.
- 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.
- Conditions for safe storage : No smoking.
Keep in a 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.

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

Contains no substances with occupational exposure limit values.

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 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. 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 concen-

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Hygiene measures

tration and amount of dangerous substances, and to the specific work-place.
Wear as appropriate:
Flame-resistant clothing
Footwear protecting against chemicals
: 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
Color	: Clear, colorless
Odor	: No data available
Odor Threshold	: No data available
pH	: Not applicable
Freezing point	: -35 °C
Boiling point/boiling range	: 213 °C
Flash point	: 77 °C
Evaporation rate	: No data available
Self-ignition	: 225 °C
Upper explosion limit / Upper flammability limit	: Upper flammability limit 5.4 %(V)
Lower explosion limit / Lower flammability limit	: Lower flammability limit 0.6 %(V)
Vapor pressure	: 0.35 kPa (65 °C)
Solubility(ies) Water solubility	: Soluble in hydrocarbon solvents; insoluble in water.
Relative vapor density	: 5.81 (Air = 1.0)
Relative density	: 0.76 (15.6 °C)
Density	: 0.76 g/cm ³ (20 °C)

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

Viscosity
Viscosity, kinematic : 0.68 cSt (100 °C)

Oxidizing properties : no

Molecular weight : 168.36 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.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data available

Health hazard information**Acute toxicity****Components:****1-Dodecene:**

Acute oral toxicity : LD50 (Rat, male): > 10,000 mg/kg
Method: Fixed Dose Method
Assessment: Not harmful
Remarks: Information given is based on data obtained from

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similar substances.

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

1-Dodecene:

Acute oral toxicity : LD50 (Rat, male): > 10,000 mg/kg
Method: Fixed Dose Method
Assessment: Not harmful
Remarks: Information given is based on data obtained from similar substances.

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

1-Tetradecene:

Acute inhalation toxicity : Assessment: Not classified
Remarks: Not classified due to data which are conclusive although insufficient for classification.
Information given is based on data obtained from similar substances.

Dodecane:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: Information given is based on data obtained from similar substances.

Skin corrosion/irritation**Components:****1-Dodecene:**

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

1-Dodecene:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

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1-Tetradecene:

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.

Serious eye damage/eye irritation**Components:****1-Dodecene:**

Species	: Rabbit
Result	: No eye irritation
Assessment	: No eye irritation
GLP	: yes
Remarks	: Information given is based on data obtained from similar substances.

1-Dodecene:

Species	: Rabbit
Result	: No eye irritation
Assessment	: No eye irritation
GLP	: yes
Remarks	: Information given is based on data obtained from similar substances.

1-Tetradecene:

Species	: Rabbit
Result	: No eye irritation
Exposure time	: 72 h
Assessment	: No eye irritation
Method	: Draize Test
GLP	: yes
Remarks	: Information given is based on data obtained from similar substances.

Respiratory or skin sensitization**Components:****1-Dodecene:**

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

1-Dodecene:

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

1-Tetradecene:

Test Type : No data available
Species : Guinea pig
Result : Did not cause sensitization on laboratory animals.

Carcinogenicity**Components:****1-Dodecene:**

No data available

Carcinogenicity - Assessment : Not available

1-Dodecene:

No data available

Carcinogenicity - Assessment : Not available

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

Not applicable

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test substance: yes

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

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Test substance: yes

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

1-Dodecene:

Not applicable

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test substance: yesTest Type: Chromosome aberration test in vitro
Method: OECD Guideline 473
Result: negative
Test substance: yes

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

1-Tetradecene: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: noTest Type: Mammalian cell gene mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Guideline 476
Result: negative
GLP: yes
Test substance: noTest Type: Chromosome aberration test in vitro
Method: OECD Guideline 473
Result: negative
GLP: yes
Test substance: noGenotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse

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Method: Mutagenicity (micronucleus test)
Result: negative
GLP: yes
Test substance: no

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

Reproductive toxicity**Components:****1-Dodecene:**

No data available

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.
Not available

1-Dodecene:

No data available

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.
Not available

1-Tetradecene:

Reproductive toxicity - Assessment : No toxicity to reproduction

STOT-single exposure**Product:**

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

STOT-repeated exposure**Product:**

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

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

Species : Rat, Male and female

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NOAEL : 1,000 mg/kg
Application Route : Oral diet
Exposure time : 13 wk
Number of exposures : daily
Dose : 0, 100, 500, 1000 mg/kg
Method : OCED Guideline 408
GLP : yes
Remarks : Information given is based on data obtained from similar substances.

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

1-Dodecene:

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

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

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Aspiration toxicity**Components:****1-Dodecene:**

May be fatal if swallowed and enters airways.

1-Dodecene:

May be fatal if swallowed and enters airways.

1-Tetradecene:

May be fatal if swallowed and enters airways.

Dodecane:

May be fatal if swallowed and enters airways.

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information**Product:**

Remarks : Solvents may degrease the skin.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****1-Dodecene:**

Toxicity to fish : Remarks: No toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates : Remarks: No toxicity at the limit of solubility.

Toxicity to algae/aquatic plants : Remarks: No toxicity at the limit of solubility.

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Ecotoxicology Assessment

Acute aquatic toxicity : This material is not expected to be harmful to aquatic organisms.

1-Dodecene:

Toxicity to fish : Remarks: No toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates : Remarks: No toxicity at the limit of solubility.

Toxicity to algae/aquatic plants : Remarks: No toxicity at the limit of solubility.

Ecotoxicology Assessment

Acute aquatic toxicity : This material is not expected to be harmful to aquatic organisms.

1-Tetradecene:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: yes
Method: OECD Test Guideline 203
GLP: yes
Remarks: The product has low solubility in the test medium.
An aqueous dispersion was tested.

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test substance: yes
Method: OECD Test Guideline 202
GLP: yes
Remarks: The product has low solubility in the test medium.
An aqueous dispersion was tested.

Toxicity to algae/aquatic plants : EL50 (Selenastrum capricornutum (algae)): > 1,000 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: yes
Method: OECD Test Guideline 201
GLP: yes
Remarks: The product has low solubility in the test medium.
An aqueous dispersion was tested.

Ecotoxicology Assessment

Acute aquatic toxicity : This material is not expected to be harmful to aquatic organisms.

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Chronic aquatic toxicity : This material is not expected to be harmful to aquatic organisms.

Dodecane:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): 1,000 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : NOEC: 1,000 mg/l
Exposure time: 72 h

Persistence and degradability**Components:****1-Dodecene:**

Biodegradability : Biodegradation: 74.1 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301
Remarks: This material is expected to be readily biodegradable.

1-Dodecene:

Biodegradability : Biodegradation: 74.1 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301
Remarks: This material is expected to be readily biodegradable.

1-Tetradecene:

Biodegradability : Remarks: Readily biodegradable, according to appropriate OECD test.

Bioaccumulative potential**Components:****1-Dodecene:**

Bioaccumulation : Remarks: No data available

1-Dodecene:

Bioaccumulation : Remarks: No data available

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Mobility in soil**Components:****1-Dodecene:**

Mobility : Remarks: No data available

1-Dodecene:

Mobility : Remarks: No data available

1-Tetradecene:

Mobility : Remarks: No data available

Other adverse effects**Product:**

Additional ecological information : No data available

Components:**1-Dodecene:**Results of PBT and vPvB assessment : Non-classified PBT substance
Non-classified vPvB substance**1-Dodecene:**Results of PBT and vPvB assessment : Non-classified PBT substance
Non-classified vPvB substance**1-Tetradecene:**Results of PBT and vPvB assessment : Non-classified PBT substance
Non-classified vPvB substance**Endocrine disrupting properties**

No data available

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.

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Contaminated packaging : Send to a licensed waste management company.
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****IATA-DGR**

Not regulated as a dangerous good

UN/ID No.	: Not applicable
Proper shipping name	: Not applicable
Class	: Not applicable
Subsidiary risk	: Not applicable
Packing group	: Not applicable
Labels	: Not applicable
Packing instruction (cargo aircraft)	: Not applicable
Packing instruction (passenger aircraft)	: Not applicable

IMDG-Code

Not regulated as a dangerous good

UN number	: Not applicable
Proper shipping name	: Not applicable
Class	: Not applicable
Subsidiary risk	: Not applicable
Packing group	: Not applicable
Labels	: Not applicable
EmS Code	: Not applicable
Marine pollutant	: no

Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

Domestic regulation

Refer to section 15 for specific national regulation.

Special precautions for user

Remarks : 1-Dodecene, S.T. 3, Cat. Y

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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

Not applicable

Harmful Agents Required to be kept below Permission Levels

Not applicable

Hazardous substances requiring management

Not applicable

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

Not applicable

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

Not applicable

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

Not applicable

Regulation under the Chemicals Control Act**Restricted Chemicals**

Not applicable

Prohibited Chemicals

Not applicable

Toxic Release Inventory

Not applicable

Accident Precaution Chemicals

Not applicable

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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

Dangerous Substances Safety Management Act

Classification : Group 4, Flammable liquids, Type 3 petroleums, Water insoluble liquid

Hazard rank : Hazardous rank III

Designated Quantity : 2000 liter

Safety Warning : Keep away from fire

Waste Control Act

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

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

16. OTHER INFORMATION

Issuing date : 2009-10-27

Revision number and date

Number of Revision : 2.2

Revision Date : 2026-08-03

SAFETY DATA SHEET

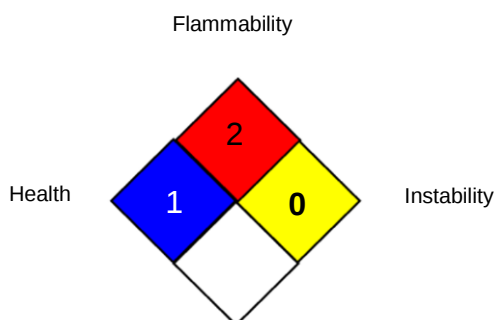
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Date format : yyyy/mm/dd

NFPA:**Full text of other abbreviations**

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; 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, Authori-

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zation 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.

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