



SAFETY DATA SHEET

503554 CARENE DELTA-3 NATURAL

Revision Date: 11-01-2018

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Version # 02

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1. IDENTIFICATION

Product Description: CARENE DELTA-3 NATURAL
CAS # 13466-78-9
FEMA Number 3821
Other means of identification
Vigon Item # 503554
Recommended use Concentrated aromatic and flavor ingredient which may be used in flavor and fragrance compounds according to legal and IFRA or FEMA GRAS/FDA guidelines.
Recommended restrictions For Manufacturing Use Only

Company

Vigon International, Inc.
127 Airport Road
E. Stroudsburg, PA 18301
For information call: 570-476-6300
Web Site: www.vigon.com

24 Hour Emergency Response Information

INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Vigon International, Inc.
Address 127 Airport Road
E. Stroudsburg, PA 18301
United States
Telephone For information call: 570-476-6300
Website www.vigon.com
E-mail Not available.
Emergency phone number INFOTRAC (ACCT# 78928);
1-800-535-5053 WITHIN THE U.S.A.
1-352-323-3500 OUTSIDE THE U.S.A.

2. HAZARD(S) IDENTIFICATION

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, oral	Category 5
	Skin corrosion/irritation	Category 2
	Sensitization, skin	Category 1
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

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Label elements



Signal word

Danger

Hazard statement

Flammable liquid and vapor. May be harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing mist or vapor. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Call a POISON CENTER/doctor if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

Storage

Store in a well-ventilated place. Keep cool. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

100% of the mixture consists of component(s) of unknown acute dermal toxicity. 100% of the mixture consists of component(s) of unknown acute inhalation toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Chemical name	Common name and synonyms	CAS number	%
CARENE DELTA	3,7,7-trimethyl bicyclo(4.1.0)hept-3-ene 3,7,7-trimethyl bicyclohept-3-ene 3,7,7-trimethyl-3-norcarene	13466-78-9	100

Additional components

Chemical name	Common name and synonyms	CAS number	%
blank		Mixture	
CYMENE PARA	1- methyl-4-propan-2-ylbenzene 4-METHYL ISOPROPYL BENZENE Methyl isopropyl benzene DOLCYMENE 4-iso propyl toluene para-methylcumene camphogen	99-87-6	

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Additional components

Chemical name	Common name and synonyms	CAS number	%
DIPENTENE	p- mentha-1,8-diene D,L- limonene 1- methyl-4-prop-1-en-2-ylcyclohexene	138-86-3	
PINENE BETA	7,7-dimethyl-4-methylidenebicyclo[3.1.1] heptane (1)-6,6- dimethyl-2-methylene bicyclo(3.1.1) heptane	127-91-3	
P-MENTHA-1(7),2-DIENE	3- methylidene-6-propan-2-ylcyclohexene BETA-PHELLANDRENE 4 isopropyl-1-methylene-2-cyclohexene 2-P-MENTHADIENE	555-10-2	
TERPINENE ALPHA	terpilene p-Mentha-1,3-diene 1- methyl-4-propan-2-ylcyclohexa-1,3-diene 4-iso-propyl-1-methyl-1,3-cyclohexadiene	99-86-5	
TERPINENE GAMMA	4-iso propyl-4-methyl-1,4-cyclohexadiene p-Mentha-1,4-diene 1,4-p-Menthadiene 1-METHYL-4-(1-METHYLETHYL)- 1,4-CYCLOHEXADIENE	99-85-4	
TERPINOLENE	cyclohexene, 1-methyl-4-(1-methylethylidene)- 1-METHYL-4-PROPAN-2-YLIDENE CYCLOHEXENE p- menth-1,4,8-diene P- METH-1-EN-8-YL-FORMATE 4-iso propylidene-1-methyl cylohexene	586-62-9	

4. FIRST-AID MEASURES

Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.
Eye contact	Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.
Ingestion	Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

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Indication of immediate medical attention and special treatment needed

Not available.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water spray, fog, CO₂, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.

Fire fighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.

Specific methods

Use water spray to cool unopened containers.

General fire hazards

Static charges generated by emptying package in or near flammable vapor may cause flash fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

The product is immiscible with water and will spread on the water surface.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Prevent product from entering drains. Absorb in vermiculite, dry sand or earth and place into containers.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Collect and dispose of spillage as indicated in section 13 of the SDS.

Environmental precautions

Retain and dispose of contaminated wash water. Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.



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7. HANDLING AND STORAGE

Precautions for safe handling Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limits

US. ACGIH Threshold Limit Values

Material	Type	Value
CARENE DELTA (CAS 13466-78-9)	TWA	20 ppm

Additional components

Additional components	Type	Value
PINENE BETA (CAS 127-91-3)	TWA	20 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Additional components	Type	Value
DIPENTENE (CAS 138-86-3)	TWA	165.5 mg/m ³
		30 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

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Exposure guidelines

- Components with limit values that require monitoring at the workplace:
- Delta-3-carene (CAS 13466-78-9)
 - Belgium: limit value - 8 hours = 20 ppm
 - Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)
 - Sweden: limit value - short term = 300 mg/m³ (50 ppm)
 - United Kingdom and Ireland: none
- beta-Pinene (CAS 127-91-3)
 - Belgium: limit value - 8 hours = 20 ppm
 - Denmark: limit value - 8 hours = 140 mg/m³ (25 ppm)
 - Denmark: limit value - short term = 280 mg/m³ (50 ppm)
 - Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)
 - Sweden: limit value - short term = 300 mg/m³ (50 ppm)
- Dipentene (dl-limonene - CAS 138-86-3)
 - Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)
 - Sweden: limit value - short term = 300 mg/m³ (50 ppm)
- D-limonene (CAS 5989-27-5) - one of the two isomers of dipentene (CAS 138-86-3)
 - Germany (AGS): limit value - 8 hours = 110 mg/m³ (20 ppm)
 - Germany (AGS): limit value - short term = 220 mg/m³ (40 ppm)
 - Germany (DFG): limit value - 8 hours = 28 mg/m³ (5 ppm)
 - Germany (DFG): limit value - short term = 112 mg/m³ (20 ppm)
- Paracymene (CAS 99-87-6)
 - Belgium: limit value - 8 hours = 100 mg/m³ (20 ppm)
 - Denmark: limit value - 8 hours = 135 mg/m³ (25 ppm)
 - Denmark: limit value - short term = 270 mg/m³ (50 ppm)
 - Sweden: limit value - 8 hours = 140 mg/m³ (25 ppm)
 - Sweden: limit value - short term = 190 mg/m³ (35 ppm)
- Terpenes
 - Austria: limit value - 8 hours = 560 mg/m³ (100 ppm)
 - Austria: limit value - short term = 560 mg/m³ (100 ppm)
 - Denmark : limit value - 8 hours = 140 mg/m³ (25 ppm)
 - Denmark : limit value - short term = 280 mg/m³ (50 ppm)
 - Sweden: limit value - 8 hours = 150 mg/m³ (25 ppm)
 - Sweden: limit value - short term = 300 mg/m³ (50 ppm)
- DNEL (Derived No-Effect Level): Workers - Acute/short-term exposure Local effects - dermal: 161 µg/cm²
- DNEL (Derived No-Effect Level): Workers - Long-term exposure Systemic effects - inhalation: 5.98 mg/m³
- DNEL (Derived No-Effect Level): General population - Acute/short-term exposure Local effects - dermal: 81 µg/cm²
- DNEL (Derived No-Effect Level): General population - Long-term exposure Systemic effects - inhalation: 1.06 mg/m³
- Systemic effects - oral: 0.31 mg/kg bw/day
- PNEC (Predicted No-Effect Concentration) aqua (freshwater): 50 µg/L
- PNEC (Predicted No-Effect Concentration) aqua (marine water): 5 µg/L
- PNEC (Predicted No-Effect Concentration) Sewage Treatment Plant: 3.26 mg/L
- PNEC (Predicted No-Effect Concentration) sediment (freshwater): 11.88 mg/kg sediment dw
- PNEC (Predicted No-Effect Concentration) sediment (marine water): 1.19 mg/kg sediment dw
- PNEC (Predicted No-Effect Concentration) soil: 2.48 mg/kg soil dw
- PNEC (Predicted No-Effect Concentration) oral: 1.35 mg/kg food
- Additional information:

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This sheet is based on the current valid lists for occupational exposure limit values. The DNELs and PNECs values are derived from the chemical safety assessment conducted for REACH. Occupational exposure limits and DNELs are health-based but they are not necessarily set in the same way.

The primary duty is to comply with risk management measures which enable to limit exposures as much as possible and to be in line with exposure reference levels.

Appropriate engineering controls Use explosion-proof ventilation equipment to stay below exposure limits. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

- Eye/face protection** Wear safety glasses with side shields (or goggles). Face shield is recommended.
- Skin protection**
- Hand protection** Chemical resistant gloves.
- Other** Use of an impervious apron is recommended.
- Respiratory protection** Respiratory protection not required. If ventilation is insufficient, suitable respiratory protection must be provided.
- Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** Refer to Spec Sheet
- Physical state** Liquid.
- Form** Liquid.
- Color** Refer to Spec Sheet
- Odor** Characteristic.
- Odor threshold** Not available.
- pH** Not available.
- Melting point/freezing point** < -112 °F (< -80 °C)
- Initial boiling point and boiling range** 338 °F (170 °C)
- Flash point** 117.0 °F (47.2 °C) Closed Cup
- Evaporation rate** Not available.
- Flammability (solid, gas)** Not applicable.
- Upper/lower flammability or explosive limits**
- Flammability limit - lower (%)** Not available.

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Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.87 at 20 °C
Solubility(ies)	
Solubility (water)	0 Insoluble
Partition coefficient (n-octanol/water)	log Kow = 4.38 (37°C)
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	< 7 mm ² /s at 20 °C Kinematic 1.3 - 1.6 mm ² /s at 25 °C Dynamic
Other information	
Explosive properties	Not explosive.
Molecular formula	C10H16
Oxidizing properties	Not oxidizing.

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May be harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Aspiration may cause pulmonary edema and pneumonitis. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

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Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
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CARENE DELTA (CAS 13466-78-9)

Acute

Oral

LD50

Rat

4800 mg/kg

Additional components

Species

Test Results

CYMENE PARA (CAS 99-87-6)

Acute

Dermal

LD50

Rabbit

> 5000 mg/kg

DIPENTENE (CAS 138-86-3)

Acute

Dermal

LD50

Rabbit

5 g/kg

Oral

LD50

Rat

5 g/kg

PINENE BETA (CAS 127-91-3)

Acute

Oral

LD50

Rat

4700 mg/kg

TERPINENE ALPHA (CAS 99-86-5)

Acute

Oral

LD50

Rat

1680 mg/kg

TERPINENE GAMMA (CAS 99-85-4)

Acute

Oral

LD50

Rat

3650 mg/kg

TERPINOLENE (CAS 586-62-9)

Acute

Dermal

LD50

Rat

> 5 ml/kg

Oral

LD50

Rat

4390 mg/kg

Skin corrosion/irritation

Causes skin irritation.

An in vitro irritation study on reconstructed human epidermis was conducted with the substance. The classification criteria were met.

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Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation. The substance is not classified as only reversible effects were observed in an eye irritation study in rabbit (OECD 405).
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	May cause an allergic skin reaction. Skin sensitization effects were observed with the substance in the Guinea Pig Maximisation Test (GPMT - OECD 406), leading to the classification of the substance as skin sensitizer 1B.
Germ cell mutagenicity	Results of tests conducted with the substance and structurally related substances show that delta-3-carene has no genotoxic potential: - no mutagenicity observed in the Ames test (OECD 471) with the substance and gum turpentine oil (UVCN substance containing delta-3-carene), - no genotoxicity observed in vitro in mammalian cells with gum turpentine oil (mammalian chromosome aberration test - OECD 473 and mammalian cell gene mutation test - OECD 476), - no genotoxicity observed in vivo in mouse with alpha-pinene (erythrocyte micronucleus test - OECD 474).
Carcinogenicity	Based on a 90-day toxicity study in rat conducted with a structurally related substance alpha-pinene, the substance is not expected to be carcinogenic for humans. IARC Monographs. Overall Evaluation of Carcinogenicity Not listed. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052) Not regulated. US. National Toxicology Program (NTP) Report on Carcinogens Not listed. US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) Not available.
Reproductive toxicity	Based on available data from structurally related substances, no toxic effects for reproduction are expected from delta-3-carene based on the following results: - no effects were observed on reproductive organs in a 90-day inhalation repeated toxicity study in rat, conducted with alpha-pinene; - no effects were found in a teratogenicity/postnatal development study conducted in rat with an UVCB substance (rowachol) containing delta-3-carene.
Specific target organ toxicity - single exposure	No specific target organ toxicity was observed in the LD ₅₀ determination studies.
Specific target organ toxicity - repeated exposure	The substance is not classified based on results from a 90-day inhalation toxicity study conducted in mice with a structurally related substance alpha-pinene: NOAEC = 283.24 mg/m ³ (effects on urinary bladder).
Aspiration hazard	May be fatal if swallowed and enters airways. If swallowed accidentally, the product may enter the lungs due to its low viscosity.
Chronic effects	Prolonged inhalation may be harmful.

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12. ECOLOGICAL INFORMATION

Ecotoxicity Very toxic to aquatic life with long lasting effects.
 · Toxicity to aquatic microorganisms:
 Sewage containing the substance can be treated by a municipal sewage treatment plant (taking into account the PNEC sewage treatment plant given in section 8).
 This PNEC is based on the following result: EC₅₀(3 h) = 326 mg/L (respiration rate - OECD 209)

Product	Species	Test Results
CARENE DELTA (CAS 13466-78-9)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Daphnia magna
		0.797 mg/l, 48 hours (measured concentration - OECD 202)

Additional components	Species	Test Results
CYMENE PARA (CAS 99-87-6)		
Other	EC50	Pseudokirchnerella subcapitata
		5.8 mg/l, 72 hours
Aquatic		
Crustacea	LC50	Water flea (Daphnia magna)
		> 4.3 - < 10 mg/l, 48 hours
Fish	LC50	Fish
		2 mg/l, 96 hours (Oryzias latipes)
		Sheepshead minnow (Cyprinodon variegatus)
		> 36 - < 64 mg/l, 96 hours
	NOEC	Sheepshead minnow (Cyprinodon variegatus)
		10 mg/l, 96 hours

DIPENTENE (CAS 138-86-3)		
Aquatic		
Fish	LC50	Carp (Leuciscus idus melanotus)
		34 mg/l, 48 hours
TERPINOLENE (CAS 586-62-9)		
Aquatic		
Crustacea	LC50	Daphnia magna
		2.55 mg/l, 48 h
Fish	LC50	Pimephales promelas
		0.72 mg/l, 96 h

Persistence and degradability Readily biodegradable [based on results from alpha-pinene and beta-pinene].
 alpha-Pinene and beta-Pinene
 Biodegradation achieved in 28 days for both substances: 76% (oxygen consumption - assay conducted according to the OECD 301 D guideline - activated sludge, domestic, non-adapted).
 · vPvB: The substance is not considered to be very Persistent and very Bioaccumulative (vPvB).

Bioaccumulative potential No data available.

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

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13. DISPOSAL CONSIDERATIONS

Disposal instructions	Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	Not established.
Waste from residues / unused products	Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ADN

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (DELTA-3-CARENE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

ADR

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (DELTA-3-CARENE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

RID

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (DELTA-3-CARENE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing Group	III
Environmental Hazards	Yes
Labels required	3
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

DOT

BULK

UN number	2319
Proper shipping name	TERPENE HYDROCARBONS, N.O.S. (DELTA-3-CARENE)
Hazard class	3
Packing group	III

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Environmental hazards

Marine pollutant	Yes
Packaging exceptions	150
Packaging bulk	242
Labels required	3

DOT**NON-BULK**

Not regulated as dangerous goods.

IATA

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (DELTA-3-CARENE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	3

IMDG

UN number	2319
UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. (DELTA-3-CARENE)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Labels required	3
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

ADN; ADR; DOT BULK; IATA; IMDG; RID



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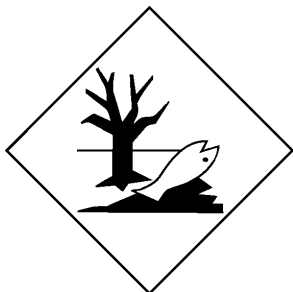
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Marine pollutant



15. REGULATORY INFORMATION

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not available.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Respiratory or skin sensitization
Aspiration hazard

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.



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US state regulations

California Proposition 65

California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Toxic Chemical Substances (TCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Issue date	11-01-2018
Revision date	11-01-2018
Version #	02
HMIS® ratings	Health: 2* Flammability: 2 Physical hazard: 0



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Revision information

This document has undergone significant changes and should be reviewed in its entirety.