SAFETY DATA SHEET

507692 YUZUZEST TEC ABJ7091M

1. IDENTIFICATION

Product Description: **YUZUZEST TEC ABJ7091M**

CAS # MIXTURE

Other means of identification

Vigon Item # 507692

Recommended use Concentrated aromatic ingredient which may be used fragrance compounds according to legal and IFRA 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 1-800-535-5053 1-352-323-3500	(ACCT# 78928); WITHIN THE U.S.A. 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
	Reproductive toxicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 2
	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

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. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. Do not breathe mist/vapors. 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. IF exposed or concerned: Get medical advice/attention. 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 20.96% of the mixture consists of component(s) of unknown acute oral toxicity. 26.2% of the mixture consists of component(s) of unknown acute dermal toxicity. 80.05% of the mixture consists of component(s) of unknown acute inhalation toxicity. 26.2% of the mixture consists of component(s) of unknown acute hazards to the aquatic environment. 20.96% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Chemical name	Common name and synonyms	CAS number	%
CARVENE	DIPENTENE (+)-P-MENTHA-1,8-DIENE (R)-(+)-Limonene (R)-4-Isopropenyl-1-methyl-1-cyclohexene 1- methyl-4-prop-1-en-2-ylcyclohexene	5989-27-5	30 - < 50
2,6-DIMETHYL-7-OCTEN-2-OL	DIMYRCETOL 2,6-DIMETHYL-7-OCTEN-2-OL 7-Octen-2-ol, 2,6-dimethyl- 2,6-Dimethyloct-7-en-2-ol lymolene	18479-58-8	1 - < 10

Chemical name	Common name and synonyms	CAS number	%
ALIPHATIC ESTERS			1 - < 10
AMINES			1 - < 10
BOURGEONAL	3-(4-tert- butylphenyl)propanal 4-(1,1-DIMETHYLETHYL)BENZENE PROPANAL Benzenepropanal, 4-(1,1-dimethylethyl)- P-TERT-BUTYLDIHYDRO CINNAMALDEHYDE	18127-01-0	1 - < 10
BUTYLPHENYL METHYLPROPIONAL	lysmeral 3-(4-tert- butylphenyl)butanal PROPIONALDEHYDE, 2-(4-TERT-BUTYLBENZYL)- BENZENEPROPANAL,4-(1,1-DIMETHYL ETHYL)-.A.-METHYL- BUTYLPHENYL METHYLPROPIONAL	80-54-6	1 - < 10
HEXYL CINNAMIC ALDEHYDE	2-(phenylmethylidene)octanal 2- benzylidene octanal alpha- hexyl cinnamaldehyde hexyl cinnamal	101-86-0	1 - < 10
HEXYL SALICYLATE	hexyl o-hydroxybenzoate hexyl 2-hydroxy-1-benzene carboxylate hexyl 2-hydroxybenzoate	6259-76-3	1 - < 10
METHYL NAPHTHYL KETONE	2-ACETYLNAPHTHALENE acetonaphthone 1- naphthalen-2-ylethanone methyl 2-naphthyl ketone	93-08-3	1 - < 10
PHENYL HEXANOL	PHENYLISOHEXANOL 3-methyl-5-phenylpentan-1-ol 3-Methyl-5-phenylpentanol phenyxol	55066-48-3	1 - < 10
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	1 - < 10
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	1 - < 10
2,4,6-trimethylcyclohex-3-ene-1-carbaldehyde	isocyclovert	1335-66-6	0.1< 1

Chemical name	Common name and synonyms	CAS number	%
2,4-DIMETHYLCYCLOHEX-3-ENE-1-CARBALDEHYDE	4-formyl-1,3-dimethylcyclohex-1-ene 2,4-DIMETHYL-3-CYCLOHEXEN-1-CARBOXALDEHYDE 3-Cyclohexene-1-carboxaldehyde, 2,4-dimethyl- DIMETHYLCYCLOHEX-3-ENE-1-CARBALDEHYDE (MIXED ISOMERS)	68039-49-6	0.1< 1
CITRAL	2,6- OCTADIENAL, 3,7-DIMETHYL- 2,6- dimethyl octadien-2,6-al-8 3,7-DIMETHYL-2,6-OCTADIENAL 3,7- dimethylocta-2,6-dienal	5392-40-5	0.1< 1
CITRONELLOL	3,7-DIMETHYL-6-OCTEN-1-OL 6-Octen-1-ol, 3,7-dimethyl- 2,6- dimethyl-2-octen-8-ol	106-22-9	0.1< 1
GERANIOL	3,7-DIMETHYL-2,6-OCTADIEN-1-OL (2E)-3,7- dimethylocta-2,6-dien-1-ol LEMONOL GERANYL ALCOHOL	106-24-1	0.1< 1
LAURIC ALDEHYDE	Dodecanal LAURYL ALDEHYDE	112-54-9	0.1< 1
Methyl 2,6,10-trimethyl cyclododeca- 2,5,9-trien-1-yl ketone	amber decatriene acetic acid anhydride reaction products with 1,5,10-trimethyl-1,5,9-cyclododecatriene	144020-22-4	0.1< 1
PINENE ALPHA	dextro,laevo-pin-2(3)-ene 2,6,6 - trimethyl bicyclo-3,1,1-2-heptene 4,7,7- trimethylbicyclo[3.1.1]hept-3-ene	80-56-8	0.1< 1

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. Prolonged exposure may cause chronic effects.

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	Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor. Keep unnecessary personnel away. 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	Collect and dispose of spillage as indicated in section 13 of the SDS. 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. Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Never return spills in original containers for re-use. This material and its container must be disposed of as hazardous waste. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent product from entering drains. 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. 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.
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.

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

Components	Type	Value	Form
CITRAL (CAS 5392-40-5)	TWA	5 ppm	Inhalable fraction and vapor.
PINENE ALPHA (CAS 80-56-8)	TWA	20 ppm	
PINENE BETA (CAS 127-91-3)	TWA	20 ppm	

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
CARVENE (CAS 5989-27-5)	TWA	165.5 mg/m3
		30 ppm

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

Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

CITRAL (CAS 5392-40-5) Can be absorbed through the skin.

Appropriate engineering controls Use explosion-proof ventilation equipment to stay below exposure limits. Good general ventilation 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 Avoid contact with eyes.

Skin protection

Hand protection Chemical resistant gloves.

Other Use of an impervious apron is recommended. Chemical resistant gloves.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations	Observe any medical surveillance requirements. 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	Not available.
Initial boiling point and boiling range	Not available.
Flash point	138.0 °F (58.9 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0.57 hPa at 20 °C Calculated 99.9%
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	914.97 kg/m3 at 20 °C
Explosive properties	Not explosive.
Molecular formula	Not applicable

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

Acute toxicity May be fatal if swallowed and enters airways.

Product	Species	Test Results
YUZUZEST TEC ABJ7091M		
Acute		
Oral		
LD50		> 5000 mg/kg ATE

Components	Species	Test Results
2,4,6-trimethylcyclohex-3-ene- 1-carbaldehyde (CAS 1335-66-6)		
Acute		
Dermal		
LD50	Rabbit	> 4600 mg/kg
Oral		
LD50	Rat	4150 mg/kg
2,4-DIMETHYLCYCLOHEX-3-ENE-1-CARBALDEHYDE (CAS 68039-49-6)		
Acute		
Oral		
LD50	Rat	3900 mg/kg

Components	Species	Test Results
2,6-DIMETHYL-7-OCTEN-2-OL (CAS 18479-58-8)		
Acute		
Oral		
LD50	Rat	3600 mg/kg
Presumed Non-Toxic		
Dermal		
LD50	Rabbit	>= 5000 mg/kg
BOURGEONAL (CAS 18127-01-0)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	2700 mg/kg
BUTYLPHENYL METHYLPROPIONAL (CAS 80-54-6)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	1390 mg/kg Remarks: Behavioral:Somnolence (general depressed activity). Lungs, Thorax, or Respiration:Dyspnea.
CARVENE (CAS 5989-27-5)		
Acute		
Dermal		
LD50	Rabbit	5 g/kg
Oral		
LD50	Rat	4400 mg/kg
CITRAL (CAS 5392-40-5)		
Acute		
Dermal		
LD50	Rabbit	2250 mg/kg
CITRONELLOL (CAS 106-22-9)		
Acute		
Dermal		
LD50	Rabbit	2650 mg/kg
Oral		
LD50	Rat	3450 mg/kg

Components	Species	Test Results
HEXYL CINNAMIC ALDEHYDE (CAS 101-86-0)		
Acute		
Dermal		
LD50	Rabbit	> 3000 mg/kg
HEXYL SALICYLATE (CAS 6259-76-3)		
Acute		
Dermal		
	Rabbit	> 5000 mg/kg
Oral		
	Rat	> 5000 mg/kg
LAURIC ALDEHYDE (CAS 112-54-9)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Oral		
LD50	Rat	> 231000 mg/kg
METHYL NAPHTHYL KETONE (CAS 93-08-3)		
Acute		
Oral		
LD50	Rat	2500 mg/kg
Presumed Non-Toxic		
Dermal		
LD50	Rabbit	99999 mg/kg
PHENYL HEXANOL (CAS 55066-48-3)		
Acute		
Dermal		
LD50	Rabbit	2300 mg/kg
Oral		
LD50	Rat	1850 mg/kg
PINENE ALPHA (CAS 80-56-8)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
PINENE BETA (CAS 127-91-3)		
Acute		
Oral		
LD50	Rat	4700 mg/kg

Components	Species	Test Results
TERPINENE GAMMA (CAS 99-85-4)		
Acute		
Oral		
LD50	Rat	3650 mg/kg

Skin corrosion/irritation Causes skin irritation.
May cause skin irritation and/or dermatitis.
May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.
Vapours may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitization

ACGIH sensitization

CITRAL, INHALABLE FRACTION AND VAPOR (CAS 5392-40-5)	Dermal sensitization
TURPENTINE AND SELECTED MONOTERPENES (CAS 127-91-3)	Dermal sensitization
TURPENTINE AND SELECTED MONOTERPENES (CAS 80-56-8)	Dermal sensitization

Respiratory sensitization Due to partial or complete lack of data the classification is not possible.

Skin sensitization May cause an allergic skin reaction.
Causes sensitisation.

Germ cell mutagenicity Due to partial or complete lack of data the classification is not possible.

Carcinogenicity Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

CARVENE (CAS 5989-27-5)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure.

12. ECOLOGICAL INFORMATION

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Components		Species	Test Results
2,4-DIMETHYLCYCLOHEX-3-ENE-1-CARBALDEHYDE (CAS 68039-49-6)			
Aquatic			
Acute			
Algae	EC50	Green algae (Desmodesmus subspicatus)	31 mg/l, 72 hours (based on growth rate - nominal concentration - OECD 201)
Crustacea	EC50	Daphnia magna	22.4 mg/l, 48 hours (measured concentration - similar to OECD 202)
Fish	LC50	Oncorhynchus mykiss (reported as Salmo gairdneri)	7.5 mg/l, 96 hours (measured concentration - OECD 203)
2,6-DIMETHYL-7-OCTEN-2-OL (CAS 18479-58-8)			
Other	EC50	Activated sludge of a predominantly domestic sewage	> 100 mg/l, 3 hours (respiration rate - nominal concentration - OECD 209)
Aquatic			
Algae	EC50	Algae	80 mg/l, 72 hours (based on growth rate – nominal concentration – OECD 201)
			65 mg/l, 72 hours (based on biomass - nominal concentration - OECD 201)
	LOEC	Algae	50 mg/l, 72 hours (nominal concentration – OECD 201)
	NOEC	Algae	25 mg/l, 72 hours (nominal concentration – OECD 201)
Crustacea	LC50	Daphnia magna	38 mg/l, 48 hours (nominal concentration - OECD 202)
	NOEC	Daphnia magna	9.5 mg/l, 21 day (OECD 211 conducted with a structurally related substance)
Fish	LC50	Oncorhynchus mykiss	27.8 mg/l, 96 hours (measured concentration - OECD 203 conducted with a structurally related substance)
BUTYLPHENYL METHYLPROPIONAL (CAS 80-54-6)			
Aquatic			
Acute			
Algae	EC50	Green algae (Chlamydomonas variabilis)	29.16 mg/l, 72 hours The details of the toxic effect related to the nominal concentration. The product has a low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested.
Crustacea	EC50	Daphnia	10.7 g/ml, 72 hours slightly toxic
Fish	LC50	Zebra danio (Danio rerio)	2.04 mg/l, 96 hours The statement of the toxic effect relates to the analytically determined concentration.

Components		Species	Test Results
CARVENE (CAS 5989-27-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	69.6 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 0.619 - < 0.796 mg/l, 96 hours
		Rainbow trout,donaldson trout (Oncorhynchus mykiss)	35 mg/l, 4 days
Other	EC50	Activated Sludge	3.94 mg/l
CITRAL (CAS 5392-40-5)			
Acute			
Other	EC20	Activated sludge of a predominantly domestic sewage	68 mg/l, 0.5 hours OECD Guideline 209 aquatic
Aquatic			
Other	EC50	Bacterium	2100 mg/l, 0.5 hours DIN 38412 Part 27 (draft) aquatic - The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.
Acute			
Algae	EC50	Green algae (Chlamydomonas variabilis)	103.8 mg/l, 72 hours DIN 38412 Part 9 static - The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.
Crustacea	EC50	Daphnia magna	7 mg/l, 48 hours Directive 79/831/EEC static - The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.
Fish	LC50	Ide, silver or golden orfe (Leuciscus idus)	> 4.6 - < 10 mg/l, 96 hours DIN 38415 Part 15 static - The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.

Components		Species	Test Results
CITRONELLOL (CAS 106-22-9)			
Aquatic			
Acute			
Algae	EC50	Algae	2.4 mg/l, 72 hours
Crustacea	EC50	Daphnia	17 mg/l, 48 hours
Fish	LC50	Leuciscus idus (Golden orfe)	> 10 - < 22 mg/l, 96 hours
GERANIOL (CAS 106-24-1)			
Other	EC50	Activated sludge of a predominantly domestic sewage	70 mg/l, 0.5 hours
Aquatic			
Algae	EC50	Green algae (Desmodesmus subspicatus)	13.1 mg/l, 72 hours
Crustacea	EC50	Daphnia magna	10.8 mg/l, 48 hours
Fish	LC50	Danio rerio	22 mg/l, 96 hours
		Rainbow trout,donaldson trout (Oncorhynchus mykiss)	> 3.3 - < 4.1 mg/l, 96 hours
HEXYL SALICYLATE (CAS 6259-76-3)			
Aquatic			
Acute			
Algae	EC50	Green algae (Desmodesmus subspicatus)	0.61 mg/l, 72 hours
Crustacea	EC50	Daphnia magna	1.5 mg/l, 24 hours
PINENE ALPHA (CAS 80-56-8)			
Aquatic			
Crustacea	LC50	Daphnia magna	41 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.28 mg/l, 96 hours

Persistence and degradability

Biodegradability

Percent degradation (Aerobic biodegradation)

GERANIOL	> 90 % OECD 301A (new version)(aerobic), activatied sludge, domestic DOC reduction, Readily biodegradable (according to OECD criteria)

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

CARVENE	4.232
PINENE ALPHA	4.83

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.

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	1169
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID (Methyl isopropenyl cyclohexene, p-Mentha-1,4-diene)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

ADR

UN number	1169
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID (Methyl isopropenyl cyclohexene, p-Mentha-1,4-diene)
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

RID

UN number	1169
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID (Methyl isopropenyl cyclohexene, p-Mentha-1,4-diene)
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	NA1993
Proper shipping name	COMBUSTIBLE LIQUID, N.O.S. (Methyl isopropenyl cyclohexene, p-Mentha-1,4-diene)
Hazard class	Combustible Liquid
Packing group	III

Environmental hazards	
Marine pollutant	No
Packaging bulk	242
Labels required	none

DOT

NON-BULK

Not regulated as dangerous goods.

IATA

UN number	1169
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID
Transport hazard class(es)	3
Subsidiary class(es)	-
Packing group	III
Environmental hazards	Yes
Labels required	3

IMDG

UN number	1169
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID (Methyl isopropenyl cyclohexene, p-Mentha-1,4-diene)
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; IATA; IMDG; RID

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.

Toxic Substances Control Act (TSCA)

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

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

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)
Skin corrosion or irritation
Respiratory or skin sensitization
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
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.

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

Issue date	12-16-2016
Revision date	11-18-2019
Version #	03
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.