

Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Issue date: 04/28/2021 Version: 1.0

SECTION 1: Identification	
1.1. Identification	
Product form	: Mixture
Product name	: CITRUS BALSAM
Product code	: Mixture
1.2. Recommended use and restriction	ons on use
No additional information available	
1.3. Supplier	
Voyageur Soap & Candle Company Ltd.	
14 - 19257 Enterprise Way	
Surrey, B.C Canada T 800-758-7773	
1 800-138-1113	
1.4. Emergency telephone number	
Emergency number	: INFOTRAC (US & Canada) 1-800-535-5053 (International) 1-352-323-3500
SECTION 2: Hazard(s) identification	
2.1. Classification of the substance of	or mixture
GHS US classification	
	Combustible liquid
Skin corrosion/irritation Category 2 H315 Skin sensitization, Category 1 H317	Causes skin irritation May cause an allergic skin reaction
	Suspected of causing cancer
Full text of H statements : see section 16	-
2.2. GHS Label elements, including p	precautionary statements
GHS US labeling	
Hazard pictograms (GHS US)	
Signal word (GHS US)	: Warning
Hazard statements (GHS US)	: H227 - Combustible liquid
	H315 - Causes skin irritation H317 - May cause an allergic skin reaction
	H317 - May cause an allergic skill reaction H351 - Suspected of causing cancer
Precautionary statements (GHS US)	: P201 - Obtain special instructions before use.
	P202 - Do not handle until all safety precautions have been read and understood.
	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No
	smoking. P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
	P264 - Wash hands, forearms and face thoroughly after handling.
	P272 - Contaminated work clothing must not be allowed out of the workplace.
	P280 - Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 - If on skin: Wash with plenty of water.
	P302+P352 - If on skin, wash with pienty of water. P308+P313 - If exposed or concerned: Get medical advice/attention.
	P321 - Specific treatment (see supplemental first aid instruction on this label).
	P332+P313 - If skin irritation occurs: Get medical advice/attention.
	P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse.
	P362+P364 - Take on contaminated clothing and wash it before reuse. P363 - Wash contaminated clothing before reuse.
	P370+P378 - In case of fire: Use media other than water to extinguish.
	P403+P235 - Store in a well-ventilated place. Keep cool.
	P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in
	accordance with local, regional, national and/or international regulation.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
D-LIMONENE	(CAS-No.) 5989-27-5	10 – 30	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
	(CAS-No.) 80-56-8	1 – 5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
DIETHYL MALONATE	(CAS-No.) 105-53-3	1 – 5	Flam. Liq. 4, H227 Eye Irrit. 2, H319
CEDRENE	(CAS-No.) 11028-42-5	1 – 5	Asp. Tox. 1, H304
ALDEHYDE C 16	(CAS-No.) 77-83-8	1 – 5	Skin Sens. 1B, H317
Myrcene	(CAS-No.) 123-35-3	< 0.5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 Asp. Tox. 1, H304
CITRAL	(CAS-No.) 5392-40-5	< 0.5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317
delta-3-Carene	(CAS-No.) 13466-78-9	< 0.5	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
I-Limonene	(CAS-No.) 5989-54-8	< 0.5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures		
4.1. Description of first aid measures		
First-aid measures general	: IF exposed or concerned: Get medical advice/attention.	
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.	
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.	
First-aid measures after eye contact	: Rinse eyes with water as a precaution.	
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell.	
4.2. Most important symptoms and effect	ts (acute and delayed)	
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.	
4.3. Immediate medical attention and special treatment, if necessary		
Treat symptomatically.		
SECTION 5: Fire-fighting measures		
5.1. Suitable (and unsuitable) extinguish	ing media	
Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.	
5.2. Specific hazards arising from the ch	Specific hazards arising from the chemical	
Fire hazard	: Combustible liquid.	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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5.3. Special protective equipment and precautions for fire-fighters			
Protectio	on during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.	
SECTI	ON 6: Accidental release meas	sures	
6.1.	Personal precautions, protective equ	uipment and emergency procedures	
6.1.1.	For non-emergency personnel		
Emerge	ncy procedures	: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray.	
6.1.2.	For emergency responders		
Protectiv	/e equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".	
6.2.	Environmental precautions		
Avoid re	lease to the environment.		
6.3.	Methods and material for containme	nt and cleaning up	
Methods	Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.		
Other in	formation	: Dispose of materials or solid residues at an authorized site.	
6.4.	Reference to other sections		
For furth	er information refer to section 13.		
SECTI	ON 7: Handling and storage		
7.1.	Precautions for safe handling		
Precauti	ons for safe handling	: Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapors/spray.	
Hygiene	measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.	
7.2.	Conditions for safe storage, includir	ng any incompatibilities	
Storage	Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.		
SECTI	ON 8: Exposure controls/pers	anal protection	

Section 6. Exposure controls/personal protection				
8.1. Control parameters				
ALDEHYDE C 16 (77-83-8)				
Not applicable	Not applicable			
CITRAL (5392-40-5)				
ACGIH	Local name	Citral		
ACGIH	ACGIH TWA (ppm)	5 ppm (IFV - Inhalable fraction and vapor)		
ACGIH	Remark (ACGIH)	TLV® Basis: Body weight eff; URT irr; eye dam. Notations: Skin; DSEN; A4 (Not classifiable as a Human Carcinogen)		
ACGIH	Regulatory reference	ACGIH 2018		
D-LIMONENE (5989-27-5)				
Not applicable				
Myrcene (123-35-3)				
Not applicable				
ALPHA PINENE (80-56-8)				
ACGIH	Local name	α-Pimene		
ACGIH	ACGIH TWA (ppm)	20 ppm		

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ALPHA PINENE (80-56-8)			
ACGIH	Remark (ACGIH)	TLV® Basis: Lung irr. Notations: DSEN; A4 (Not classifiable as a Human Carcinogen)	
ACGIH	Regulatory reference	ACGIH 2018	
CEDRENE (11028-	CEDRENE (11028-42-5)		
Not applicable			
DIETHYL MALONATE (105-53-3)			
Not applicable			
delta-3-Carene (13466-78-9)			
Not applicable			
I-Limonene (5989-54-8)			
Not applicable			

8.2. Appropriate engineering controls

Appropriate engineering controls Environmental exposure controls : Ensure good ventilation of the work station.: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties		
9.1. Information on basic physical and	chemical properties	
Physical state	: Liquid	
Color	: Mixture contains one or more component(s) which have the following colour(s): Colourless to light yellow On exposure to air: yellow White On exposure to light: yellow Colourless light yellow Colourless to yellow Colourless to light amber	
Odor	 There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Fruity odour Strong odour Lemon odour Floral odour Irritating/pungent odour Almost odourless Phenol odour Sweet odour Characteristic odour Pleasant odour Odourless Mild odour Aromatic odour Pine odour 	
Odor threshold	: No data available	
рН	: No data available	
Melting point	: Not applicable	
Freezing point	: No data available	
Boiling point	: No data available	
Flash point	: ≈61 °C	
Relative evaporation rate (butyl acetate=1)	: No data available	
08/17/2021	EN (English US) 4/13	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological informatio	n
11.1. Information on toxicological effects	
Acute toxicity (oral) :	Not classified
Acute toxicity (dermal) :	Not classified
Acute toxicity (inhalation) :	Not classified
ALDEHYDE C 16 (77-83-8)	
LD50 oral rat	5470 mg/kg (Rat, Male/female, Weight of evidence, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male/female, Experimental value, Dermal)
ATE US (oral)	5470 mg/kg body weight
CITRAL (5392-40-5)	
ATE US (dermal)	2250 mg/kg body weight
D-LIMONENE (5989-27-5)	
LD50 oral rat	> 2000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Read-across, Oral)
LD50 dermal rabbit	> 5000 mg/kg body weight (Equivalent or similar to OECD 402, Rabbit, Weight of evidence, Dermal)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ccording to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations		
ALPHA PINENE (80-56-8)		
LD50 oral rat	3700 mg/kg (Rat, Male, Weight of evidence, Oral)	
LD50 dermal rabbit	> 5000 mg/kg (24 h, Rabbit, Weight of evidence, Dermal)	
ATE US (oral)	500 mg/kg body weight	
DIETHYL MALONATE (105-53-3)		
LD50 oral rat	15794 mg/kg (Rat, Oral)	
LD50 dermal rabbit	> 16960 mg/kg (Rabbit, Dermal)	
ATE US (oral)	15794 mg/kg body weight	
delta-3-Carene (13466-78-9)		
ATE US (oral)	4800 mg/kg body weight	
ATE US (gases)	4500 ppmV/4h	
ATE US (vapors)	11 mg/l/4h	
ATE US (dust, mist)	1.5 mg/l/4h	
Skin corrosion/irritation	: Causes skin irritation.	
Serious eye damage/irritation	: Not classified	
	: May cause an allergic skin reaction.	
	: Not classified	
Germ cell mutagenicity		
Carcinogenicity	: Suspected of causing cancer.	
D-LIMONENE (5989-27-5)		
IARC group	3 - Not classifiable	
Myrcene (123-35-3)		
IARC group	2B - Possibly carcinogenic to humans	
Reproductive toxicity	: Not classified	
STOT-single exposure	: Not classified	
STOT-repeated exposure	: Not classified	
Myrcene (123-35-3)		
Myrcene (123-35-3) LOAEL (oral,rat,90 days)	250 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)	
	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)	
LOAEL (oral,rat,90 days)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : Not data available	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : No data available : Irritation. May cause an allergic skin reaction.	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : Not data available	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity Ecology - general	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 2 Not classified No data available Irritation. May cause an allergic skin reaction.	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : Not data available : Irritation. May cause an allergic skin reaction. : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. 4.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity Ecology - general ALDEHYDE C 16 (77-83-8) LC50 fish 1	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 2 Not classified Not data available Irritation. May cause an allergic skin reaction. *	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity Ecology - general ALDEHYDE C 16 (77-83-8)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : Not data available : Irritation. May cause an allergic skin reaction. : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. 4.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity Ecology - general ALDEHYDE C 16 (77-83-8) LC50 fish 1 ErC50 (algae)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : Not data available : Irritation. May cause an allergic skin reaction. : 4.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP) 36 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity Ecology - general ALDEHYDE C 16 (77-83-8) LC50 fish 1 ErC50 (algae) D-LIMONENE (5989-27-5)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 2 Not classified No data available Irritation. May cause an allergic skin reaction. 2 The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. 4.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP) 36 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)	
LOAEL (oral,rat,90 days) NOAEL (subchronic,oral,animal/male,90 days) NOAEL (subchronic,oral,animal/female,90 days) Aspiration hazard Viscosity, kinematic Symptoms/effects after skin contact SECTION 12: Ecological information 12.1. Toxicity Ecology - general ALDEHYDE C 16 (77-83-8) LC50 fish 1 ErC50 (algae)	Oral Toxicity in Rodents) 500 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) 250 mg/kg body weight Animal: mouse, Animal sex: female, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents) : Not classified : Not data available : Irritation. May cause an allergic skin reaction. : 4.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP) 36 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static	

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

D-LIMONENE (5989-27-5)		
EC50 Daphnia 1	0.36 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)	
Myrcene (123-35-3)		
EC50 Daphnia 1	0.45 mg/l	
DIETHYL MALONATE (105-53-3)		
LC50 fish 1	11.8 mg/l (96 h, Pimephales promelas)	
EC50 Daphnia 1	202.3 mg/l (48 h, Daphnia magna, Static system)	
I-Limonene (5989-54-8)		
LC50 fish 1	720 μg/l Test organisms (species): Pimephales promelas	
EC50 Daphnia 1	0.36 mg/l Test organisms (species): Daphnia magna	
LC50 fish 2	702 µg/l Test organisms (species): Pimephales promelas	
12.2. Persistence and degradability		
ALDEHYDE C 16 (77-83-8)		
Persistence and degradability	Not readily biodegradable in water.	
D-LIMONENE (5989-27-5)		
Persistence and degradability	Readily biodegradable in water.	
ThOD	3.29 g O ₂ /g substance	
ALPHA PINENE (80-56-8)		
Persistence and degradability	Readily biodegradable in water.	

12.3. Bioaccumulative potential

DIETHYL MALONATE (105-53-3) Persistence and degradability

ALDEHYDE C 16 (77-83-8)		
Partition coefficient n-octanol/water (Log Pow)	2.4 – 2.8 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).	
D-LIMONENE (5989-27-5)		
BCF fish 1	864.8 – 1022 (Pisces, QSAR, Fresh weight)	
Partition coefficient n-octanol/water (Log Pow)	4.38 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 37 °C)	
Bioaccumulative potential	Potential for bioaccumulation ($4 \ge Log$ Kow ≤ 5).	
ALPHA PINENE (80-56-8)		
BCF fish 1	718 (Pimephales promelas, QSAR)	
Partition coefficient n-octanol/water (Log Pow)	4.487 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)	
Bioaccumulative potential	Potential for bioaccumulation (500 \leq BCF \leq 5000).	
DIETHYL MALONATE (105-53-3)		
Partition coefficient n-octanol/water (Log Pow)	0.96	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).	

Readily biodegradable in water.

12.4. Mobility in soil

59 N/m (19.6 °C, 0.79 g/l, OECD 115: Surface Tension of Aqueous Solutions)
2.34 – 2.74 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Low potential for adsorption in soil.
Adsorbs into the soil.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ALPHA PINENE (80-56-8)	
Ecology - soil	Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.
DIETHYL MALONATE (105-53-3)	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal consideration	าร
13.1. Disposal methods	
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
SECTION 14: Transport information	
Department of Transportation (DOT) In accordance with DOT	
Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s. (D-LIMONENE), 9, III
UN-No.(DOT)	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s. D-LIMONENE
Class (DOT)	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Packing group (DOT)	: III - Minor Danger
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Symbols	: G - Identifies PSN requiring a technical name

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Special Provisions (49 CFR 172.102)	 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 173 - An appropriate generic entry may be used for this material. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s." UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T4 - 2.65 178.274(d)(2) Normal 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / 1 + a (tr - tf) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
	TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Emergency Response Guide (ERG) Number	: 171
Other information	: No supplementary information available.
Transportation of Dangerous Goods	
Transport document description	: UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (D-LIMONENE), 9, III
UN-No. (TDG)	: UN3082
Proper Shipping Name (Transportation of Dangerous Goods)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
TDG Primary Hazard Classes	: 9 - Class 9 - Miscellaneous Products, Substances or Organisms
Packing group	: III - Minor Danger

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

TDG Special Provisions	 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; (b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; (c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; (d) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. (a) UN244, MENCINE, SOLID, TOXIC, N.O.S. (a) UN249, MEDICINE, SOLID, TOXIC, N.O.S. (a) UN244, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b) UN2900, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b) UN2905 SUBSTANCE, SOLID, N.O.S., or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S,
Explosive Limit and Limited Quantity Index	: 5 L
Transport by sea	
Transport document description (IMDG)	: UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (D-LIMONENE), 9, III, MARINE POLLUTANT
UN-No. (IMDG)	: 3082
Proper Shipping Name (IMDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class (IMDG)	: 9 - Miscellaneous dangerous substances and articles
Packing group (IMDG)	: III - substances presenting low danger
Limited quantities (IMDG)	: 5L
Air transport	
Transport document description (IATA)	: UN 3082 Environmentally hazardous substance, liquid, n.o.s. (D-LIMONENE), 9, III
UN-No. (IATA)	: 3082
Proper Shipping Name (IATA)	: Environmentally hazardous substance, liquid, n.o.s.
Class (IATA)	: 9 - Miscellaneous Dangerous Substances and Articles
Packing group (IATA)	: III - Minor Danger

SECTION 15: Regulatory information	
15.1. US Federal regulations	

All components of this product are listed as Active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

15.2. International regulations

CANADA ALDEHYDE C 16 (77-83-8) Listed on the Canadian DSL (Domestic Substances List) CITRAL (5392-40-5) Listed on the Canadian DSL (Domestic Substances List) D-LIMONENE (5989-27-5) Listed on the Canadian DSL (Domestic Substances List) Myrcene (123-35-3) Listed on the Canadian DSL (Domestic Substances List) ALPHA PINENE (80-56-8) Listed on the Canadian DSL (Domestic Substances List) **CEDRENE (11028-42-5)** Listed on the Canadian DSL (Domestic Substances List) **DIETHYL MALONATE (105-53-3)** Listed on the Canadian DSL (Domestic Substances List) delta-3-Carene (13466-78-9) Listed on the Canadian DSL (Domestic Substances List) I-Limonene (5989-54-8) Listed on the Canadian DSL (Domestic Substances List) **EU-Regulations**

No additional information available

National regulations
ALDEHYDE C 16 (77-83-8)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on KECI (Korean Existing Chemicals Inventory) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIOC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
CITRAL (5392-40-5)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on KECI (Korean Existing Chemicals Inventory) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIOC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the Australian HSIS Consolidated List Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ording to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations	
D-LIMONENE (5989-27-5)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on KECI (Korean Existing Chemicals Inventory) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIOC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the Australian HSIS Consolidated List Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Myrcene (123-35-3) Listed on IARC (International Agency for Research on Cancer) ALPHA PINENE (80-56-8)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on KECI (Korean Existing Chemicals Inventory) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)	
CEDRENE (11028-42-5)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)	
DIETHYL MALONATE (105-53-3)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on KECI (Korean Existing Chemicals Inventory) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)	
delta-3-Carene (13466-78-9)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)	
I-Limonene (5989-54-8)	
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the TCSI (Taiwan Chemical Substance Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) EC_INVENTORY Listed on the Australian HSIS Consolidated List Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)	

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases:

H226	Flammable liquid and vapor
H227	Combustible liquid
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer

SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.