



OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Issue date: 09/14/2018

Revision date: 05/21/2020

Supersedes: 09/14/2018

Version: 1.1

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
Product name : OIL, JAPANESE CITRON*
CAS-No. : N/A
Product code : 90-3031-82
Product group : Trade product

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

The Lebermuth Company
4004 Technology Drive
46628 South Bend, IN - United States
T 574-259-7000 - F 574-258-7450
info@lebermuth.com - www.lebermuth.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - USA: 800-424-9300 International: +1 703-527-3887 / 1-800-424-9300
CCN 13010

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Flammable liquids Category 4 H227 Combustible liquid
Skin corrosion/irritation Category 2 H315 Causes skin irritation
Skin sensitization, Category 1 H317 May cause an allergic skin reaction
Aspiration hazard Category 1 H304 May be fatal if swallowed and enters airways

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labeling

Hazard pictograms (GHS CA) :



Signal word (GHS CA) : Danger

Hazard statements (GHS CA) : H227 - Combustible liquid
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction

Precautionary statements (GHS CA) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P331 - Do NOT induce vomiting.
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.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403 - Store in a well-ventilated place.
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.

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
BENZYL BENZOATE	benylate / benzoate / benzoic acid, benzyl ester / benzoic acid, phenylmethyl ester / benzyl alcohol, benzoic ester / benzyl benzenecarboxylate / benzyl benzoate / benzyl benzoate USP 600040 / benzyl phenylformate / benzylets / FEMA number 2138	(CAS-No.) 120-51-4	25 - 50	Acute Tox. 4 (Oral), H302
DIOCTYL ADIPATE	adipic acid bis(2-ethylhexyl)ester / adipic acid di(2-ethylhexyl)ester / adipol 2EH / BEHA (=bis(2-ethylhexyl)adipate) / bis(2-ethylhexyl) adipate / bis(2-ethylhexyl)adipate, selectophore / bis(2-ethylhexyl)hexanedioate / bisoflex DOA / DEHA (=bis(2-ethylhexyl)adipate) / di(2-ethylhexyl)adipate / diisooctyladipate (=bis(2-ethylhexyl) adipate) / DOA (=bis(2-ethylhexyl)adipate) / effemoll DOA / effomoll DOA / ergoplast addo / flexol a26 / flexol plasticizer 10.a / flexol plasticizer a26 / good-rite plasticizer GP233 / harflex 250 / hexanedioic acid di(2-ethylhexyl)ester / hexanedioic acid dioctyl ester / hexanedioic acid, bis(2-ethylhexyl) ester / hexanedioic bis(2-ethylhexyl ester) / kemester 5652 / kodaflex doa / mollan s / monoplex doa / morflex 310 / octyl adipate (=bis(2-ethylhexyl)adipate) / PALATINOL DOA / PX238 / reomol DOA (=bis(2-ethylhexyl)adipate) / rucoflex plasticizer DOA / sicol 250 / staflex DOA / truflex DOA / uniflex DOA / vestinol OA / wickenol 158 / witamol 320	(CAS-No.) 103-23-1	25 - 50	Not classified
ORANGE OIL		(CAS-No.) 8028-48-6	5 - 10	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
LEMON OIL		(CAS-No.) 8008-56-8	1 - 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
LINALOOL	(+/-)-linalool / 1,6-octadien-3-ol, 3,7-dimethyl- / 2,6-dimethyl-2,7-octadiene-6-ol / 2,6-dimethylocta-2,7-dien-6-ol / 3,7-dimethyl-1,6-octadien-3-ol / 3,7-dimethyl-3-hydroxy-1,6-octadiene,dl- / 3,7-dimethylocta-1,6-dien-3-ol / allo-ocimanol / beta-linalool / coriandrol / dl-3,7-dimethyl-3-hydroxy-1,6-octadiene / linalool / linalyl alcohol / Substances with a flash-point above 60 °C and not more than 100 °C / Substances with a flash-point above 60 °C and not more than 100 °C, which do not belong to another class	(CAS-No.) 78-70-6	1 - 5	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
2-tert-Butylcyclohexyl acetate		(CAS-No.) 88-41-5	1 - 5	Flam. Liq. 4, H227
ORANGE OIL		(CAS-No.) 8028-48-6	1 - 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1, H317 Asp. Tox. 1, H304
HEXYL ACETATE		(CAS-No.) 142-92-7	1 - 5	Flam. Liq. 3, H226

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
GRAPEFRUIT OIL		(CAS-No.) 8016-20-4	1 - 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
STYRALLYL ACETATE		(CAS-No.) 93-92-5	1 - 5	Not classified
AMYL ACETATE		(CAS-No.) 628-63-7	1 - 5	Flam. Liq. 3, H226
LEMON OIL TERPENES		(CAS-No.) 68917-33-9	1 - 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
GAMMA UNDECALACTONE		(CAS-No.) 104-67-6	1 - 5	Not classified
2-Phenoxyethyl isobutyrate		(CAS-No.) 103-60-6	1 - 5	Not classified
DIHYDROMYRCENOL	2,6-dimethyloct-7-en-2-ol / 7-octen-2-ol, 2,6-dimethyl- / dihydromyrcenol	(CAS-No.) 18479-58-8	0.1 - 1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
ETHYL BUTYRATE		(CAS-No.) 105-54-4	0.1 - 1	Flam. Liq. 3, H226
Ethyl 2-methyl-1,3-dioxolane-2-acetate		(CAS-No.) 6413-10-1	0.1 - 1	Flam. Liq. 4, H227
METHYL DIHYDROAJASMONATE	cyclopentaneacetic acid, 3-oxo-2-pentyl-, methyl ester / methyl (2-pentyl-3-oxocyclopentyl)acetate / methyl 3-oxo-2-pentylcyclopentaneacetate / methyl dihydrojasmonate	(CAS-No.) 24851-98-7	0.1 - 1	Not classified
GAMMA DECALACTONE	(+/-)-4-n-hexylbutyrolactone / (+/-)-4-normal-hexylbutyrolactone / (+/-)-gamma-decalactone / (+/-)-gamma-decanolactone / (R/S)-gamma-decalactone / 2(3H)-furanone, 5-hexyldihydro- / 2-decalactone / 4,5-dihydro-5-hexyl-2(3H)-furanone / 4-hexyl-4-butanolide / 4-hexyl-gamma-butyrolactone / 4-hydroxydecanoic acid lactone / 4-hydroxydecanoic acid-gamma-lactone / 5-hexyldihydro-2(3H)-furanone / 5-hexyltetrahydro-2-furanone / decalactone gamma / decan-4-olide / decanoic acid, 4-hydroxy-, gamma-lactone / decanolactone(=gamma-decanolactone) / decanolide-1,4 / gamma-decalactone / gamma-decalactone,(R/S)- / gamma-decanolactone / gamma-decanolide / gamma-hexylbutyrolactone / gamma-hexyl-gamma-butyrolactone / gamma-n-decalactone / gamma-n-hexyl-gamma-butyrolactone / gamma-normal-decalactone / gamma-normal-hexyl-gamma-butyrolactone / hydroxydecanoic acid-gamma-lactone	(CAS-No.) 706-14-9	0.1 - 1	Not classified
cis-3-Hexen-1-yl acetate		(CAS-No.) 3681-71-8	0.1 - 1	Flam. Liq. 4, H227

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
GERANYL ACETATE	2,6-dimethyl-2,6-octadien-8-yl ethanoate, trans- / 2,6-dimethyl-2,6-octadiene-8-yl acetate, trans / 2,6-octadien-1-ol, 3,7-dimethyl-, acetate, (2E)- / 2,6-octadien-1-ol, 3,7-dimethyl-, acetate, (E)- / 2,6-octadien-1-ol, 3,7-dimethyl-, acetate, trans- / 3,7-dimethyl-2,6-octadien-1-ol, acetate, trans- / 3,7-dimethyl-2,6-octadien-1-yl acetate, trans / 3,7-dimethyl-2,6-octadienyl acetate, trans- / 3,7-dimethyl-2-trans, 6-octadienyl acetate / 3,7-dimethylocta-2,6-dien-1-yl-acetate, trans / 3,7-dimethyl-trans-2,6-octadien-1-yl-acetate, mixture of isomers / acetic acid, geraniol ester, trans / bay pine (oyster) oil, trans / beta-geranyl acetate / FEMA number 2509 / geraniol acetate, trans / geranyl acetate / geranyl acetate, trans- / geranyl ethanoate, trans / trans-, geranyl ethanoate / trans-2,6-dimethyl-2,6-octadien-8-yl ethanoate / trans-3,7-dimethyl-2,6-octadien-1-ol, acetate / trans-3,7-dimethyl-2,6-octadien-1-yl acetate / trans-3,7-dimethyl-2,6-octadienyl acetate / trans-3,7-dimethylocta-2,6-dien-1-yl-acetate	(CAS-No.) 105-87-3	0.1 - 1	Skin Irrit. 2, H315 Skin Sens. 1B, H317
1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta-γ-2-benzopyran		(CAS-No.) 1222-05-5	0.1 - 1	Flam. Liq. 4, H227
BUTYL ACETATE		(CAS-No.) 123-86-4	0.1 - 1	Flam. Liq. 3, H226 STOT SE 3, H336
Nonyl acetate		(CAS-No.) 143-13-5	0.1 - 1	Not classified
CITRONELLYL ACETATE	(+/-)-citronellyl acetate / 1-acetoxy-3,7-dimethyloct-6-ene / 2,6-dimethyl-2-octen-8-ol acetate / 2-octen-8-ol, 2,6-dimethyl-, acetate / 3,7-dimethyl-6-octen-1-yl acetate / 6-octen-1-ol, 3,7-dimethyl-, acetate / 8-acetoxy-2,6-dimethyl-2-octene / acetic acid, 3,7-dimethyl-6-octen-1-yl ester / acetic acid, citronellyl ester / beta-citronellyl acetate / citronellol acetate / citronellol acetate, dl- / citronellyl acetate / dl-citronellol acetate / FEMA N° 2311	(CAS-No.) 150-84-5	0.1 - 1	Skin Irrit. 2, H315
7-acetyl-1,1,3,4,4,6-hexamethyltetralin		(CAS-No.) 1506-02-1	0.1 - 1	Acute Tox. 4 (Oral), H302
ETHYL CAPRYLATE		(CAS-No.) 106-32-1	0.1 - 1	Flam. Liq. 4, H227
α-Terpineol		(CAS-No.) 98-55-5	0.1 - 1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
β-Caryophyllene		(CAS-No.) 87-44-5	0.1 - 1	Skin Sens. 1B, H317 Asp. Tox. 1, H304
2-Methylbutyl acetate		(CAS-No.) 624-41-9	0.1 - 1	Flam. Liq. 3, H226
CIS-3-HEXENOL		(CAS-No.) 928-96-1	0.1 - 1	Flam. Liq. 3, H226 Eye Irrit. 2A, H319
ETHYL MALTOL	2-ethyl pyromeconic acid / 2-ethyl-3-hydroxy-4H-pyran-4-one / 3-hydroxy-2-ethyl-4-pyrone / 4H-pyran-4-one, 2-ethyl-3-hydroxy- / ethyl maltol / veltol plus	(CAS-No.) 4940-11-8	0.1 - 1	Acute Tox. 4 (Oral), H302
LINALYL ACETATE	1,5-dimethyl-1-vinyl-4-hexenyl acetate / 1,6-octadien-3-ol, 3,7-dimethyl-, acetate / 3,7-dimethyl-1,6-octadien-3-ol acetate / 3,7-dimethyl-1,6-octadien-3-yl acetate / acetic acid linalool ester / bergamiol / bergamol / bergamot mint oil / ex bois de rose (synthetic) / FEMA No. 2636 / licareol acetate / linalol acetate / linalool acetate / linalyl acetate / linalyl acetate synthetic	(CAS-No.) 115-95-7	0.1 - 1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Skin Sens. 1B, H317

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
γ-NONALACTONE	1,4-nonanolide / 1,4-nonanolactone / 2(3H)-furanone, dihydro-5-pentyl- / 4-hydroxynonanoic acid lactone / 4-hydroxynonanoic acid, gamma-lactone / 4-nonanolide / 4-pentylbutanolide / aldehyde C-18 / coconut aldehyde / dihydro-5-pentyl-2(3H)-furanone / FEMA number 2781 / gamma-amylobutyrolactone / gamma-amylobutyrolactone / gamma-n-amylobutyrolactone / gamma-nonanoic lactone / gamma-nonanolide / gamma-normal-amylobutyrolactone / gamma-pentyl-gamma-butyrolactone / nonan-1,4-olide / nonan-4-olide / nonane-1,4-olide / nonanoic acid, 4-hydroxy-gamma-lactone / prunolide	(CAS-No.) 104-61-0	0.1 - 1	Not classified
DIBENZYL ETHER		(CAS-No.) 103-50-4	0.1 - 1	Flam. Liq. 4, H227 Skin Sens. 1B, H317
GERANIOL	(E)-3,7-dimethyl-2,6-octadien-1-ol / (E)-geraniol / (E)-nerol / 2,6-dimethyl-2,6-octadien-8-ol / 2,6-dimethyl-trans-2,6-octadien-8-ol / 2,6-octadien-1-ol, 3,7-dimethyl-, (E)- / 2,6-octadien-1-ol, 3,7-dimethyl-, trans- / 2-trans-3,7-dimethyl-2,6-octadien-1-ol / 3,7-dimethyl-2,6-octadien-1-ol, (E)- / 3,7-dimethyl-2,6-octadien-1-ol, trans- / 3,7-dimethyl-trans-2,6-octadien-1-ol / beta-geraniol / geraniol alcohol / geraniol extra / geranyl alcohol / guaniol / lemonol / Substances with a flash-point above 60 °C and not more than 100 °C / Substances with a flash-point above 60 °C and not more than 100 °C, which do not belong to another class / trans-2,6-octadien-1-ol, 3,7-dimethyl- / trans-3,7-dimethyl-2,6-octadien-1-ol / trans-geraniol	(CAS-No.) 106-24-1	0.1 - 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317
BETA PINENE	2(10)-pinene / 6,6-dimethyl-2-methylenebicyclo(3.1.1)heptane / beta-pinene / beta-pinene(FCC) / bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene- / FEMA No 2903 / nopinen / nopinene / PC 600 / pin-2(10)-ene / pseudopinene / pseudopinene / pseudopinene / pseudopinene / terebenthene(=beta-pinene)	(CAS-No.) 127-91-3	0.072 - 0.108	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
cis-Jasmone		(CAS-No.) 488-10-8	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2B, H320
TRIETHYL CITRATE		(CAS-No.) 77-93-0	< 0.1	Not classified
CITRAL		(CAS-No.) 5392-40-5	< 0.1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
Dimethylcyclohex-3-ene-1-carbaldehyde (isomer unspecified)	3-cyclohexene-1-carboxaldehyde, dimethyl- / dimethyl-3-cyclohexene-1-carboxaldehyde / dimethylcyclohex-3-ene-1-carbaldehyde / trivertal	(CAS-No.) 27939-60-2	< 0.1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
CITRONELLOL	(+/-)-3,7-dimethyl-6-octen-1-ol / (+/-)-3,7-dimethyloct-6-en-1-ol / (+/-)-citronellol / 2,3-dihydrogeraniol / 2,6-dimethyl-2-octen-8-ol / 3,7-dimethyl-6-octen-1-ol / 3,7-dimethyl-octen-6-ol-1 / 6-octen-1-ol, 3,7-dimethyl- / 6-octen-1-ol, 3,7-dimethyl-, (+/-)- / beta-citronellol / cephol / citronellol / citronellol 950 / citronellol, dl- / dihydrogeraniol / dl-citronellol / FEMA No 2309 / FEMA No 2980 / rhodinol / rodinol	(CAS-No.) 106-22-9	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
2,4-Dimethyl-3-cyclohexen-1-carboxaldehyde		(CAS-No.) 68039-49-6	0.0072 - 0.018	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Skin Sens. 1B, H317
2,2,5-Trimethyl-5-pentylcyclopentanone		(CAS-No.) 65443-14-3	0.0072 - 0.018	Flam. Liq. 4, H227

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
BUCCHU OIL		(CAS-No.) 68650-46-4	< 0.1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
Ethyl 2-methylpentanoate		(CAS-No.) 39255-32-8	< 0.1	Flam. Liq. 3, H226
Dimethylcyclohex-3-ene-1-carbaldehyde (isomer mixture)		(CAS-No.) 68737-61-1	< 0.1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Skin Sens. 1B, H317
ALPHA PINENE	2,6,6-trimethylbicyclo-(3,1,1)-2-heptene / 2,6,6-trimethylbicyclo(3.1.1)-2-hept-2-ene / 2,6,6-trimethylbicyclo(3.1.1)-2-heptene / 2,6,6-trimethylbicyclo(3.1.1)hept-2-ene / 2,6,6-trimethylbicyclo(3.1.1)-2-heptene / 2-pinene / acintene A / alpha-pinene (FCC) / australene / bicyclo(3.1.1)hept-2-ene, 2,6,6-trimethyl- / FEMA No 2902 / pin-2(3)-ene / pinen alpha / pinene (=alpha-pinene) / pinene, pract. (=alpha-pinene)	(CAS-No.) 80-56-8	0.0036 - 0.0072	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
1-(5,5-Dimethyl-1-cyclohexen-1-yl)pent-4-en-1-one		(CAS-No.) 56973-85-4	0.00072 - 0.0036	Skin Sens. 1B, H317
Tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran	2H-pyran, tetrahydro-4-methyl-2-(2-methyl-1-propenyl)- / 2H-pyran, tetrahydro-4-methyl-2-(2-methylpropenyl)- / pyran, 2-(2-methyl-1-propenyl)-4-methyltetrahydro- / pyran, tetrahydro-2-(2-methyl-1-propenyl)-4-methyl- / pyran, tetrahydro-4-methyl-2-(2-methylpropenyl)- / rosenoxide / rosoxide / tetrahydro-2-(2-methyl-1-propenyl)-4-methylpyran / tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran	(CAS-No.) 16409-43-1	0.00072 - 0.0036	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Repr. 2, H361
GERANIOL		(CAS-No.) 106-24-1	< 0.1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317
LIMONENE		(CAS-No.) 138-86-3	< 0.1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
CITRAL		(CAS-No.) 5392-40-5	< 0.1	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317

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 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 : Do not induce vomiting. Call a physician immediately.
- First-aid measures general : Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.
- Symptoms/effects after ingestion : Risk of lung edema.

4.3. Immediate medical attention and special treatment, if necessary

- Other medical advice or treatment : Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Unsuitable extinguishing media

No additional information available

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

5.3. Specific hazards arising from the hazardous product

Fire hazard : Combustible liquid.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions 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. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/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, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

CITRAL (5392-40-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Citral
ACGIH TWA (ppm)	5 ppm
Remark (ACGIH)	Body weight eff; URT irr; eye dam; Skin; DSEN; A4 (Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories)
BETA PINENE (127-91-3)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (ppm)	20 ppm
ALPHA PINENE (80-56-8)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (ppm)	20 ppm
AMYL ACETATE (628-63-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Pentyl acetate, all isomers
ACGIH TWA (ppm)	50 ppm
USA - OSHA - Occupational Exposure Limits	
Local name	n-Amyl acetate
OSHA PEL (TWA) (mg/m ³)	525 mg/m ³
OSHA PEL (TWA) (ppm)	100 ppm

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

BUTYL ACETATE (123-86-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	n-Butyl acetate
ACGIH TWA (ppm)	150 ppm
ACGIH STEL (ppm)	200 ppm
Remark (ACGIH)	Eye & URT irr
USA - OSHA - Occupational Exposure Limits	
Local name	n-Butyl-acetate
OSHA PEL (TWA) (mg/m ³)	710 mg/m ³
OSHA PEL (TWA) (ppm)	150 ppm
2-Methylbutyl acetate (624-41-9)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Pentyl acetate, all isomers
ACGIH TWA (ppm)	50 ppm
CITRAL (5392-40-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Citral
ACGIH TWA (ppm)	5 ppm
Remark (ACGIH)	Body weight eff; URT irr; eye dam; Skin; DSEN; A4 (Not classifiable as a Human Carcinogen: Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories)

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : 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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: No data available
Color	: Mixture contains one or more component(s) which have the following colour(s): Colourless to light yellow White Colourless to light amber Colourless Light yellow Colourless to yellow
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: Strong odour Characteristic odour Mild odour Pleasant odour Aromatic odour Pine odour Floral odour Fruity odour Lemon odour Sweet odour
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 61 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: No data available
Vapor pressure at 50 °C	: No data available
Relative density	: 0.948 (0.938 - 0.958)
Solubility	: Insoluble.
Log Pow	: No data available
Explosion limits	: No data available

9.2. Other information

Refractive index	: 1.482 (1.472 - 1.492)
------------------	-------------------------

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ALDEHYDE C-18 (104-61-0)	
LD50 oral rat	> 5000 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Dermal)
TERPINEOL ALPHA (98-55-5)	
LD50 oral	4300 mg/kg body weight
ATE CA (oral)	4300 mg/kg body weight
BENZYL BENZOATE (120-51-4)	
LD50 oral rat	> 2000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male/female, Experimental value, Oral, 14 day(s))
LD50 oral	1500 mg/kg body weight
LD50 dermal rabbit	> 2 ml/kg (Modification of Draize 1959 method, 4 h, Rabbit, Experimental value, Dermal)
LD50 dermal	4000 mg/kg body weight
ATE CA (oral)	1500 mg/kg body weight
ATE CA (Dermal)	4000 mg/kg body weight
BUCHU ESSENCE MAX OIL (68650-46-4)	
LD50 oral	720 mg/kg body weight
ATE CA (oral)	720 mg/kg body weight
DIOCTYL ADIPATE (DOA) (103-23-1)	
LD50 oral rat	> 20000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male/female, Experimental value, Oral)
LC50 inhalation rat (mg/l)	> 5.7 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male/female, Experimental value, Inhalation (aerosol))
CITRAL SYNTHETIC (5392-40-5)	
LD50 dermal	2250 mg/kg body weight
ATE CA (Dermal)	2250 mg/kg body weight

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

CYCLAL C (68039-49-6)	
LD50 oral	3900 mg/kg body weight
ATE CA (oral)	3900 mg/kg body weight
PINENE BETA (127-91-3)	
LD50 oral rat	4700 mg/kg (Rat, Oral)
ATE CA (oral)	4700 mg/kg body weight
CITRONELLOL, NATURAL (106-22-9)	
LD50 oral rat	3450 mg/kg (Rat, Inconclusive, insufficient data, Oral)
LD50 oral	3450 mg/kg body weight
LD50 dermal rabbit	2650 mg/kg (Rabbit, Inconclusive, insufficient data, Dermal)
LD50 dermal	2650 mg/kg body weight
ATE CA (oral)	3450 mg/kg body weight
ATE CA (Dermal)	2650 mg/kg body weight
PINENE ALPHA (80-56-8)	
LD50 oral rat	3700 mg/kg (Rat, Male, Weight of evidence, Oral)
LD50 oral	500 mg/kg body weight
LD50 dermal rabbit	> 5000 mg/kg (24 h, Rabbit, Weight of evidence, Dermal)
ATE CA (oral)	500 mg/kg body weight
Geraniol (106-24-1)	
LD50 oral	3600 mg/kg body weight
ATE CA (oral)	3600 mg/kg body weight
Tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran (16409-43-1)	
LD50 oral rat	4300 mg/kg (Rat, Oral)
LD50 oral	4300 mg/kg body weight
ATE CA (oral)	4300 mg/kg body weight
Dimethylcyclohex-3-ene-1-carbaldehyde (isomer mixture) (68737-61-1)	
LD50 oral	3600 mg/kg body weight
LD50 dermal	5000 mg/kg body weight
ATE CA (oral)	3600 mg/kg body weight
ATE CA (Dermal)	5000 mg/kg body weight
JASMONE (CIS) (488-10-8)	
LD50 oral	4300 mg/kg body weight
ATE CA (oral)	4300 mg/kg body weight
CITRONELLYL ACETATE EXTRA (150-84-5)	
LD50 oral rat	6800 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Dermal)
ATE CA (oral)	6800 mg/kg body weight
DIBENZYL ETHER (103-50-4)	
LD50 oral	2500 mg/kg body weight
ATE CA (oral)	2500 mg/kg body weight
DIHYDROMYRCENOL (18479-58-8)	
LD50 oral	3600 mg/kg body weight
ATE CA (oral)	3600 mg/kg body weight
DECALACTONE GAMMA (706-14-9)	
LD50 oral rat	5000 mg/kg (Rat, Oral)
ATE CA (oral)	5000 mg/kg body weight
GERANIOL 90 (106-24-1)	
LD50 oral rat	3600 mg/kg body weight (Rat; Experimental value)
LD50 oral	3600 mg/kg body weight
LD50 dermal rabbit	> 5000 mg/kg body weight (Rabbit; Experimental value)
ATE CA (oral)	3600 mg/kg body weight
GERANYL ACETATE PRIME (105-87-3)	
LD50 oral rat	6300 mg/kg (Rat, Oral)
ATE CA (oral)	6300 mg/kg body weight
LINALOOL 90 (78-70-6)	
LD50 oral rat	2790 mg/kg (Rat)

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

LINALOOL 90 (78-70-6)	
LD50 oral	2790 mg/kg body weight
LD50 dermal rat	5610 mg/kg (Rat)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit)
ATE CA (oral)	2790 mg/kg body weight
ATE CA (Dermal)	5610 mg/kg body weight

HEDIONE (24851-98-7)	
LD50 oral rat	> 5000 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Dermal)

TRIPAL, PURE (27939-60-2)	
LD50 oral rat	3600 mg/kg (Rat, Oral)
LD50 oral	3900 mg/kg body weight
LD50 dermal rabbit	5000 mg/kg (Rabbit, Dermal)
ATE CA (oral)	3600 mg/kg body weight
ATE CA (Dermal)	5000 mg/kg body weight

VERDOX PURE (OTBCHA) (88-41-5)	
LD50 oral	4600 mg/kg body weight
ATE CA (oral)	4600 mg/kg body weight

CITRAL NATURAL (5392-40-5)	
LD50 dermal	2250 mg/kg body weight
ATE CA (Dermal)	2250 mg/kg body weight

ORANGE SWEET OIL (8028-48-6)	
LD50 oral rat	> 5000 mg/kg body weight (Rat; Equivalent or similar to OECD 401; Experimental value)
LD50 dermal rabbit	> 5000 mg/kg body weight (Rabbit; Experimental value; Equivalent or similar to OECD 402)

TONALID (1506-02-1)	
LD50 oral	1000 mg/kg body weight
ATE CA (oral)	1000 mg/kg body weight

VELTOL PLUS (4940-11-8)	
LD50 oral rat	1150 mg/kg (Rat, Oral)
LD50 oral	1200 mg/kg body weight
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Dermal)
ATE CA (oral)	1150 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified

STOT-single exposure : Not classified

BUTYL ACETATE (123-86-4)	
STOT-single exposure	May cause drowsiness or dizziness.

: Not classified

STOT-repeated exposure

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Aspiration hazard : May be fatal if swallowed and enters airways.

Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/effects after ingestion : Risk of lung edema.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

ALDEHYDE C-18 (104-61-0)	
Log Pow	2.5

BENZYL BENZOATE (120-51-4)	
LC50 fish 1	2.32 mg/l (EU Method C.1, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	3.09 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h algae [mg/l] 1	0.475 mg/l (OECD 201: Alga, Growth Inhibition Test, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
BCF fish 1	2.286 (BCFBAF v3.00, Pisces, QSAR)
Log Pow	3.97 (Experimental value, 25 °C)
Log Koc	3.8 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)

DIOCTYL ADIPATE (DOA) (103-23-1)	
LC50 fish 1	54 - 150 mg/l (96 h, Salmo gairdneri, Static system)
EC50 Daphnia 1	> 500 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
EC50 72h algae [mg/l] 1	> 500 mg/l (DIN 38412-9, Scenedesmus subspicatus, Static system, Fresh water, Experimental value, Biomass)
BCF fish 1	27 (Other, 28 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Experimental value)
BCF fish 2	3.162 (Calculated value)
Log Pow	8.1 (Calculated)
Log Koc	4.687 (log Koc, SRC PCKOCWIN v1.66, Calculated value)

PINENE BETA (127-91-3)	
LC50 fish 1	0.557 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinus carpio, Semi-static system, Fresh water, Weight of evidence, GLP)
EC50 Daphnia 1	1.248 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Weight of evidence, GLP)
ErC50 (algae)	0.826 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, GLP)
BCF other aquatic organisms 1	1125 (BCFBAF v3.00, Fresh water, QSAR, Fresh weight)
Log Pow	4.425 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Log Koc	3.01 - 3.82 (log Koc, Calculated value)

CITRONELLOL, NATURAL (106-22-9)	
LC50 fish 1	10 - 22 mg/l (96 h, Leuciscus idus)
EC50 Daphnia 1	17 mg/l (48 h, Daphnia magna)
EC50 72h algae [mg/l] 1	2.4 mg/l (Algae)
Log Pow	3.41 - 3.91

PINENE ALPHA (80-56-8)	
BCF fish 1	718 (Pimephales promelas, QSAR)
Log Pow	4.487 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)

CITRONELLYL ACETATE EXTRA (150-84-5)	
LC50 fish 1	> 22 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Brachydanio rerio)

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

CITRONELLYL ACETATE EXTRA (150-84-5)	
Log Pow	4.28
DIHYDROMYRCENOL (18479-58-8)	
Log Pow	3.47 (Estimated value)
GERANIOL 90 (106-24-1)	
LC50 fish 1	> 9.8 mg/l (LC50; 96 h)
GERANYL ACETATE PRIME (105-87-3)	
LC50 fish 1	68.12 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 96 h, Leuciscus idus, Static system, Fresh water, Read-across)
EC50 Daphnia 1	14.1 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h algae [mg/l] 1	3.72 mg/l (OECD 201: Alga, Growth Inhibition Test, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
BCF other aquatic organisms 1	1500 (Estimated value)
Log Pow	4.04 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Log Koc	3.06 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
LINALOOL 90 (78-70-6)	
LC50 fish 2	27.8 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Salmo gairdneri)
EC50 Daphnia 1	59 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna)
EC50 other aquatic organisms 1	>= 100 mg/l (3 h; Activated sludge)
Log Pow	2.84 - 3.145
Threshold limit algae 1	88.3 mg/l (EC50; 96 h)
LINALYL ACETATE SPECIAL (115-95-7)	
LC50 fish 1	11 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinus carpio)
EC50 Daphnia 1	15 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna)
EC50 72h algae [mg/l] 1	16 mg/l (OECD 201: Alga, Growth Inhibition Test, Scenedesmus subspicatus)
Log Pow	3.93 (Experimental value)
HEDIONE (24851-98-7)	
Log Pow	3 (Estimated value)
ORANGE SWEET OIL (8028-48-6)	
LC50 fish 1	702 µg/l (LC50; Equivalent or similar to OECD 203; 96 h; Pimephales promelas; Flow-through system; Fresh water; Read-across)
EC50 Daphnia 1	0.67 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Static system; Fresh water; Experimental value)
BCF other aquatic organisms 1	32 - 395 (BCF; BCFWIN)
Log Pow	2.78 - 4.88 (QSAR; KOWWIN)
12.2. Persistence and degradability	
ALDEHYDE C-18 (104-61-0)	
Persistence and degradability	Biodegradability in water: no data available.
BENZYL BENZOATE (120-51-4)	
Persistence and degradability	Readily biodegradable in water.
DIOCTYL ADIPATE (DOA) (103-23-1)	
Persistence and degradability	Readily biodegradable in water.
PINENE BETA (127-91-3)	
Persistence and degradability	Readily biodegradable in water.
CITRONELLOL, NATURAL (106-22-9)	
Persistence and degradability	Readily biodegradable in water.
Chemical oxygen demand (COD)	2.05 g O ₂ /g substance
ThOD	2.961 g O ₂ /g substance
PINENE ALPHA (80-56-8)	
Persistence and degradability	Readily biodegradable in water.
Tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran (16409-43-1)	
Persistence and degradability	Biodegradability in water: no data available.
ThOD	2.9 g O ₂ /g substance

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

CITRONELLYL ACETATE EXTRA (150-84-5)	
Persistence and degradability	Biodegradability in water: no data available.
DIHYDROMYRCENOL (18479-58-8)	
Persistence and degradability	Biodegradability in water: no data available.
DECALACTONE GAMMA (706-14-9)	
Persistence and degradability	Biodegradability in water: no data available.
GERANIOL 90 (106-24-1)	
Persistence and degradability	Readily biodegradable in water.
ThOD	2.9 g O ₂ /g substance
GERANYL ACETATE PRIME (105-87-3)	
Persistence and degradability	Readily biodegradable in water.
ThOD	2.6 g O ₂ /g substance
LINALOOL 90 (78-70-6)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.531 g O ₂ /g substance
Chemical oxygen demand (COD)	2.808 g O ₂ /g substance
LINALYL ACETATE SPECIAL (115-95-7)	
Persistence and degradability	Readily biodegradable in water.
HEDIONE (24851-98-7)	
Persistence and degradability	Readily biodegradable in water.
TRIPLAL, PURE (27939-60-2)	
Persistence and degradability	Biodegradability in water: no data available.
VELTOL PLUS (4940-11-8)	
Persistence and degradability	Biodegradability in water: no data available.
12.3. Bioaccumulative potential	
ALDEHYDE C-18 (104-61-0)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Log Pow	2.5
BENZYL BENZOATE (120-51-4)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
BCF fish 1	2.286 (BCFBAF v3.00, Pisces, QSAR)
Log Pow	3.97 (Experimental value, 25 °C)
Log Koc	3.8 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
DIOCTYL ADIPATE (DOA) (103-23-1)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
BCF fish 1	27 (Other, 28 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Experimental value)
BCF fish 2	3.162 (Calculated value)
Log Pow	8.1 (Calculated)
Log Koc	4.687 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
PINENE BETA (127-91-3)	
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
BCF other aquatic organisms 1	1125 (BCFBAF v3.00, Fresh water, QSAR, Fresh weight)
Log Pow	4.425 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Log Koc	3.01 - 3.82 (log Koc, Calculated value)
CITRONELLOL, NATURAL (106-22-9)	
Log Pow	3.41 - 3.91
PINENE ALPHA (80-56-8)	
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
BCF fish 1	718 (Pimephales promelas, QSAR)
Log Pow	4.487 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran (16409-43-1)	
Bioaccumulative potential	No bioaccumulation data available.

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

CITRONELLYL ACETATE EXTRA (150-84-5)	
Bioaccumulative potential	No bioaccumulation data available.
Log Pow	4.28
DIHYDROMYRCENOL (18479-58-8)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Log Pow	3.47 (Estimated value)
DECALACTONE GAMMA (706-14-9)	
Bioaccumulative potential	No bioaccumulation data available.
GERANIOL 90 (106-24-1)	
Bioaccumulative potential	No bioaccumulation data available.
GERANYL ACETATE PRIME (105-87-3)	
Bioaccumulative potential	Potential for bioaccumulation ($4 \geq \text{Log Kow} \leq 5$).
BCF other aquatic organisms 1	1500 (Estimated value)
Log Pow	4.04 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Log Koc	3.06 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
LINALOOL 90 (78-70-6)	
Bioaccumulative potential	Bioaccumable.
Log Pow	2.84 - 3.145
LINALYL ACETATE SPECIAL (115-95-7)	
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
Log Pow	3.93 (Experimental value)
HEDIONE (24851-98-7)	
Log Pow	3 (Estimated value)
TRIPLAL, PURE (27939-60-2)	
Bioaccumulative potential	No bioaccumulation data available.
ORANGE SWEET OIL (8028-48-6)	
BCF other aquatic organisms 1	32 - 395 (BCF; BCFWIN)
Log Pow	2.78 - 4.88 (QSAR; KOWWIN)
VELTOL PLUS (4940-11-8)	
Bioaccumulative potential	No bioaccumulation data available.
12.4. Mobility in soil	
ALDEHYDE C-18 (104-61-0)	
Log Pow	2.5
BENZYL BENZOATE (120-51-4)	
Surface tension	0.027 N/m (210 °C)
Ecology - soil	Low potential for mobility in soil.
Log Koc	3.8 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
Log Pow	3.97 (Experimental value, 25 °C)
DIOCTYL ADIPATE (DOA) (103-23-1)	
Ecology - soil	Low potential for mobility in soil.
Log Koc	4.687 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Log Pow	8.1 (Calculated)
PINENE BETA (127-91-3)	
Ecology - soil	Low potential for mobility in soil.
Log Koc	3.01 - 3.82 (log Koc, Calculated value)
Log Pow	4.425 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
CITRONELLOL, NATURAL (106-22-9)	
Log Pow	3.41 - 3.91
PINENE ALPHA (80-56-8)	
Ecology - soil	Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.
Log Pow	4.487 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

CITRONELLYL ACETATE EXTRA (150-84-5)	
Log Pow	4.28
DIHYDROMYRCENOL (18479-58-8)	
Ecology - soil	No (test)data on mobility of the substance available.
Log Pow	3.47 (Estimated value)
GERANYL ACETATE PRIME (105-87-3)	
Ecology - soil	Low potential for mobility in soil.
Log Koc	3.06 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Log Pow	4.04 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
LINALOOL 90 (78-70-6)	
Log Pow	2.84 - 3.145
LINALYL ACETATE SPECIAL (115-95-7)	
Ecology - soil	Adsorbs into the soil.
Log Pow	3.93 (Experimental value)
HEDIONE (24851-98-7)	
Log Pow	3 (Estimated value)
ORANGE SWEET OIL (8028-48-6)	
Log Pow	2.78 - 4.88 (QSAR; KOWWIN)

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

Not regulated for transport

14.2. Transport information/DOT

Department of Transport

Not regulated for transport

14.3. Air and sea transport

IMDG

Not regulated for transport

IATA

Not regulated for transport

SECTION 15: Regulatory information

15.1. National regulations

ACETATE C-09 (143-13-5)	
Listed on the Canadian DSL (Domestic Substances List)	
UNDECALACTONE GAMMA (104-67-6)	
Listed on the Canadian DSL (Domestic Substances List)	
ALDEHYDE C-18 (104-61-0)	
Listed on the Canadian DSL (Domestic Substances List)	
TERPINEOL ALPHA (98-55-5)	
Listed on the Canadian DSL (Domestic Substances List)	
BENZYL BENZOATE (120-51-4)	
Listed on the Canadian DSL (Domestic Substances List)	

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

BUCHU ESSENCE MAX OIL (68650-46-4)
Listed on the Canadian DSL (Domestic Substances List)
DIOCTYL ADIPATE (DOA) (103-23-1)
Listed on the Canadian DSL (Domestic Substances List)
CITRAL SYNTHETIC (5392-40-5)
Listed on the Canadian DSL (Domestic Substances List)
CYCLAL C (68039-49-6)
Listed on the Canadian DSL (Domestic Substances List)
VELOUTONE (65443-14-3)
Listed on the Canadian DSL (Domestic Substances List)
PINENE BETA (127-91-3)
Listed on the Canadian DSL (Domestic Substances List)
CITRONELLOL, NATURAL (106-22-9)
Listed on the Canadian DSL (Domestic Substances List)
PINENE ALPHA (80-56-8)
Listed on the Canadian DSL (Domestic Substances List)
DYNASCONE (56973-85-4)
Listed on the Canadian DSL (Domestic Substances List)
Geraniol (106-24-1)
Listed on the Canadian DSL (Domestic Substances List)
Tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran (16409-43-1)
Listed on the Canadian DSL (Domestic Substances List)
Dimethylcyclohex-3-ene-1-carbaldehyde (isomer mixture) (68737-61-1)
Listed on the Canadian DSL (Domestic Substances List)
CARYOPHYLLENE B (87-44-5)
Listed on the Canadian DSL (Domestic Substances List)
HEXENOL (CIS-3) (LEAF ALCOHOL) (928-96-1)
Listed on the Canadian DSL (Domestic Substances List)
HEXENYL ACETATE (CIS-3) (3681-71-8)
Listed on the Canadian DSL (Domestic Substances List)
JASMONE (CIS) (488-10-8)
Listed on the Canadian DSL (Domestic Substances List)
CITRONELLYL ACETATE EXTRA (150-84-5)
Listed on the Canadian DSL (Domestic Substances List)
DIBENZYL ETHER (103-50-4)
Listed on the Canadian DSL (Domestic Substances List)
DIHYDROMYRCENOL (18479-58-8)
Listed on the Canadian DSL (Domestic Substances List)
ETHYL BUTYRATE (105-54-4)
Listed on the Canadian DSL (Domestic Substances List)
ETHYL CAPRYLATE (106-32-1)
Listed on the Canadian DSL (Domestic Substances List)
FRUCTONE, PURE (6413-10-1)
Listed on the Canadian DSL (Domestic Substances List)
GALAXOLIDE PURE (1222-05-5)
Listed on the Canadian DSL (Domestic Substances List)
DECALACTONE GAMMA (706-14-9)
Listed on the Canadian DSL (Domestic Substances List)
GARDENOL (STYRALLYL ACETATE) (93-92-5)
Listed on the Canadian DSL (Domestic Substances List)
GERANIOL 90 (106-24-1)
Listed on the Canadian DSL (Domestic Substances List)

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

GERANYL ACETATE PRIME (105-87-3)
Listed on the Canadian DSL (Domestic Substances List)
HEXYL ACETATE, PURE (142-92-7)
Listed on the Canadian DSL (Domestic Substances List)
LINALOOL 90 (78-70-6)
Listed on the Canadian DSL (Domestic Substances List)
LINALYL ACETATE SPECIAL (115-95-7)
Listed on the Canadian DSL (Domestic Substances List)
HEDIONE (24851-98-7)
Listed on the Canadian DSL (Domestic Substances List)
MANZANATE (39255-32-8)
Listed on the Canadian DSL (Domestic Substances List)
AMYL ACETATE (628-63-7)
Listed on the Canadian DSL (Domestic Substances List)
BUTYL ACETATE (123-86-4)
Listed on the Canadian DSL (Domestic Substances List)
PHENOXYETHYL ISOBUTYRATE (103-60-6)
Listed on the Canadian DSL (Domestic Substances List)
TRIETHYL CITRATE (77-93-0)
Listed on the Canadian DSL (Domestic Substances List)
TRIPLAL, PURE (27939-60-2)
Listed on the Canadian DSL (Domestic Substances List)
VERDOX PURE (OTBCHA) (88-41-5)
Listed on the Canadian DSL (Domestic Substances List)
METHYL-2 BUTYL ACETATE (624-41-9)
Listed on the Canadian DSL (Domestic Substances List)
GRAPEFRUIT PINK OIL (8016-20-4)
Listed on the Canadian DSL (Domestic Substances List)
CITRAL NATURAL (5392-40-5)
Listed on the Canadian DSL (Domestic Substances List)
LEMON ARGENTINA OIL (8008-56-8)
Listed on the Canadian DSL (Domestic Substances List)
LEMON TERPENES (68917-33-9)
Listed on the Canadian DSL (Domestic Substances List)
ORANGE SWEET OIL (8028-48-6)
Listed on the Canadian DSL (Domestic Substances List)
ORANGE 5X DECOLORIZED OIL (8028-48-6)
Listed on the Canadian DSL (Domestic Substances List)
TONALID (1506-02-1)
Listed on the Canadian DSL (Domestic Substances List)
VELTOL PLUS (4940-11-8)
Listed on the Canadian DSL (Domestic Substances List)
LIMONENE-L (138-86-3)
Listed on the Canadian DSL (Domestic Substances List)

15.2. International regulations

ACETATE C-09 (143-13-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
UNDECALACTONE GAMMA (104-67-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
ALDEHYDE C-18 (104-61-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
TERPINEOL ALPHA (98-55-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

BENZYL BENZOATE (120-51-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
BUCHU ESSENCE MAX OIL (68650-46-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
DIOCTYL ADIPATE (DOA) (103-23-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CITRAL SYNTHETIC (5392-40-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CYCLAL C (68039-49-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
VELOUTONE (65443-14-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
PINENE BETA (127-91-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CITRONELLOL, NATURAL (106-22-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
PINENE ALPHA (80-56-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
DYNASCONE (56973-85-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Geraniol (106-24-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Tetrahydro-4-methyl-2-(2-methylpropen-1-yl)pyran (16409-43-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Dimethylcyclohex-3-ene-1-carbaldehyde (isomer mixture) (68737-61-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CARYOPHYLLENE B (87-44-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
HEXENOL (CIS-3) (LEAF ALCOHOL) (928-96-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
HEXENYL ACETATE (CIS-3) (3681-71-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
JASMONE (CIS) (488-10-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CITRONELLYL ACETATE EXTRA (150-84-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
DIBENZYL ETHER (103-50-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
DIHYDROMYRCENOL (18479-58-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
ETHYL BUTYRATE (105-54-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
ETHYL CAPRYLATE (106-32-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
FRUCTONE, PURE (6413-10-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
GALAXOLIDE PURE (1222-05-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
DECALACTONE GAMMA (706-14-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
GARDENOL (STYRALLYL ACETATE) (93-92-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

GERANIOL 90 (106-24-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
GERANYL ACETATE PRIME (105-87-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
HEXYL ACETATE, PURE (142-92-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
LINALOOL 90 (78-70-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
LINALYL ACETATE SPECIAL (115-95-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
HEDIONE (24851-98-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
MANZANATE (39255-32-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
AMYL ACETATE (628-63-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
BUTYL ACETATE (123-86-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
PHENOXYETHYL ISOBUTYRATE (103-60-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
TRIETHYL CITRATE (77-93-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
TRIPLAL, PURE (27939-60-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
VERDOX PURE (OTBCHA) (88-41-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
METHYL-2 BUTYL ACETATE (624-41-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
GRAPEFRUIT PINK OIL (8016-20-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
CITRAL NATURAL (5392-40-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
LEMON ARGENTINA OIL (8008-56-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
LEMON TERPENES (68917-33-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
ORANGE SWEET OIL (8028-48-6)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
ORANGE 5X DECOLORIZED OIL (8028-48-6)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory
TONALID (1506-02-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
VELTOL PLUS (4940-11-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
LIMONENE-L (138-86-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SECTION 16: Other information

SDS Major/Minor : None
Issue date : 09/14/2018
Revision date : 05/21/2020
Supersedes : 09/14/2018

Full text of H-phrases:

H226 Flammable liquid and vapour

OIL, JAPANESE CITRON*

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

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
H318	Causes serious eye damage
H319	Causes serious eye irritation
H320	Causes eye irritation
H336	May cause drowsiness or dizziness
H361	Suspected of damaging fertility or the unborn child

SDS Canada (GHS)

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.