

TAKASAGO

AROMA INGREDIENTS COMPENDIUM



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ALPHABETICAL INDEX

Ambretone®
Angelica Lactone alpha
Biocyclamol®
Biomuguet®
cis- Jasmone
Citral Extra
l-Citronellol
l-Citronellyl Acetate
Cyclohexyl Lactone
Cypressan
Dextramber®
Dihydro beta Ionone
l-Dihydro Citronellol
Dimethyl Dioxolan
Florantone T
Geraniol Extra
Geranyl Acetate
Hediorosa®
Hindinol®
Humus Ether®
Ionone alpha
Jasmodione®
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Levocitriole®
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Lorexan®
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Matsutakeol
l-Menthol
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Menthone Synthetic
l-Menthyl Acetate
Methyl Dioxolan
Methyl Ionone alpha
Methyl Ionone gamma EQ
l-Musccone
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Myrcene P&F T500

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Neryl Acetate
Nopol T
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Phellandrene
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Piperitone 95
Polyambrol®
Sakura Salicylate®
Sauvignone 100
Terpinen-4-ol Natural
Terpinolene
Thesaron®
Trepanol®
Violet T

Sustainability Index

Product	Chiraroma®	Sustainable Scent™	Biobased Index	Biodegradability	ISO 16128	Nature Identical	High Impact
AMBER							
Dextramber®	●	-	●	●●●	●	-	●
Polyambrol®	-	-	●●	●	●	●	-
CITRUS							
Citral Extra	-	-	-	●	-	●	-
Hedirosa®	●	-	●●	●●●	●	-	-
Levocitrile®	●	●	●●●	●●●	●	-	-
<i>l</i> -Limonene - 80	-	-	●●●	○	●	●	-
Lorexan®	-	-	-	○	-	-	-
Myrcene P&F T500	-	-	●●●	●●	●	●	-
Phellandrene	-	-	●●●	●●	●	●	-
Terpinen-4-ol Natural	-	-	●●●	○	●	●	-
Terpinolene	-	-	●●●	○	●	●	-
EARTHY							
Humus Ether®	-	-	●	●	-	-	●
Matsutakeol	-	-	-	-	-	●	●
FLORAL							
Biocyclamol®	●	●	●●●	●●●	●	●	-
Biomuguet®	●	●	●●●	●●●	●	●	-
cis-Jasmone	-	-	-	●●●	-	●	-
<i>l</i> -Citronellol	●	●	●●●	●●●	●	●	-
<i>l</i> -Citronellyl Acetate	●	-	●●	●●●	●	●	-
Dihydro beta Ionone	-	-	-	●●	-	●	-
<i>l</i> -Dihydro Citronellol	●	-	●●●	●●●	●	●	-
Florantone T	-	-	-	-	-	-	-
Geraniol Extra	-	-	●●●	○	●	●	-
Geranyl Acetate	-	-	●●	○	●	●	-
Ionone alpha	-	-	-	●	-	●	-
Jasmodione®	-	-	-	●●	-	●	-
<i>l</i> -Laurinal®	●	●	●●●	●●●	●	●	-
Nerol Extra	-	●	●●●	●●●	●	●	-
Neryl Acetate	-	-	●●	●●●	●	●	-
Sakura Salicylate®	-	-	-	●●●	-	-	-

Biodegradability

●●● Readily ●● Inherently ● Partially ○ Not Assessed - Not Readily

Biobased Index

●●● 100% ●● ≥ 75% ● ≥ 50% - < 50%

Sustainability Index

Product	Chiraroma®	Sustainable Scent™	Biobased Index	Biodegradability	ISO 16128	Nature Identical	High Impact
FRUITY							
Angelica Lactone alpha	-	●	●●●	●●●	●	●	-
Cyclohexyl Lactone	-	-	-	●●	-	-	-
Dimethyl Dioxolan	-	-	-	○	-	-	-
Methyl Dioxolan	-	-	-	○	-	-	-
Sauvignone 100	-	-	-	○	-	-	●
Thesaron®	●	-	●●●	-	●	-	-
GREEN							
Trepanol®	-	●	●●●	●●●	-	-	-
Violet T	-	-	-	●●	-	-	●
HERBAL							
Cypressan	-	-	-	○	-	-	-
Matsutake Acetate	-	-	-	○	-	●	●
/-Menthyl Acetate	●	-	●●	○	●	●	-
Piperitone 95	-	-	●●●	○	●	●	-
MINT							
/-Menthol	●	●	●●●	●●●	●	●	-
Menthone Natural	-	-	●●●	-	●	●	-
Menthone Synthetic	-	-	●●●	-	●	●	-
MUSK							
Ambretone®	-	-	-	●●●	-	-	-
/-Muscone	●	-	-	●●●	-	●	●
Musk T®	-	-	-	●●●	-	-	-
PINE							
Nopol T	-	-	●●	-	●	-	-
Pinene alpha	-	-	●●●	●●●	●	●	-
Pinene beta	-	-	●●●	●	●	●	-
WOODY							
Hindinol®	●	-	●●	●●	●	-	-
Methyl Ionone alpha	-	-	-	○	-	-	-
Methyl Ionone gamma EQ	-	-	-	-	-	-	-
Nopyl Acetate	-	-	●●	●●●	●	-	-
Orbitone® T	-	-	●●	-	●	-	-

Biodegradability

●●● Readily ●● Inherently ● Partially ○ Not Assessed - Not Readily

Biobased Index

●●● 100% ●● ≥ 75% ● ≥ 50% - < 50%

TERMS

Abbreviation

CAS	Chemical Abstracts Service
GC	Gas Chromatography
FEMA	The Flavor and Extract Manufacturers Association of the United States
GRAS	Generally Recognized As Safe
IFRA	The International Fragrance Association
CLogP	Octanol-water partition coefficient. All the data in this compendium is calculated.
Optical rotation	In this compendium, the data is mentioned only for Chiraroma® products.

Chiraroma®

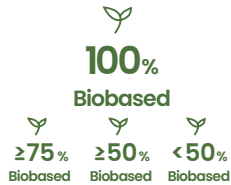
Chiraroma® materials provide the desired optical isomers selectively using Takasago's chiral technology. The quality, strength and odor of Chiraroma® materials are closer to those found in nature, versus their racemic counterparts, due to their optical purity.

Chiraroma® is also known to have advantages of improved biodegradability, substantivity, safety profile and differentiation in psychophysiological impact.

Sustainable Scent™

Sustainable Scent™ is a category of product that are made from renewable resources, score 100% biobased index and its biodegradability are Readily or Inherently.

TERMS



Biobased index

Biobased index can reveal if an ingredient is composed of biomass materials, petroleum, or fossil-based materials. This index afforded by ASTM D6866-12, is based on the amount of ¹⁴C.



Biodegradability

Biodegradation is the breakdown of organic matter by microorganisms, such as bacteria and fungi. It is determined according to OECD test method guideline.

Readily: ≥60% within 28 days and from 10 to 60% within 10 days.

Inherently: ≥60% within 60 days.

Partially: 20 to 60% within 60 days.



ISO 16128

ISO 16128 is a guideline that defines the criteria for natural and organic cosmetic ingredients and products. Ingredients that have a score of 50% or more will be listed



Nature Identical

Ingredients that can be found in nature.



High Impact

Ingredients that can be used in small dosage yet have a strong impact.



CAS No. 37609-25-9

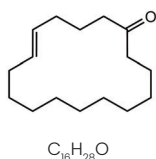
Ambretone®

MUSK SWEET FLORAL AMBER



CHEMICAL STRUCTURE

5-Cyclohexadecen-1-one



SYNONYM

5-Cyclohexadecenone

APPLICATION INFORMATION

Finds extensive use in many fragrance accords, such as delicate florals, animalic, amber, and musk fragrances.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	> 01 WEEKS
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BLOOM DIFFUSIVITY

FAIRLY DIFFUSIVE

TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	170°C
GC	98% min. as 5-Cyclohexadecen-1-one
CAS No.	37609-25-9
FEMA / GRAS No.	-
CLogP	5.82

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	236.99
Vapor Pressure	0.032 Pa at 25°C



CAS No. 591-12-8

Sustainable Scent™

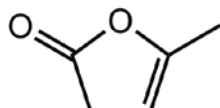
Angelica Lactone alpha

FRUITY HERBAL SWEET ANISIC

Fruity **100%** Biobased Readily ISO 16128 Nature Identical

CHEMICAL STRUCTURE

5-Methylfuran-2(3H)-one



C₅H₆O₂

SYNONYM

alpha-Angelica lactone

APPLICATION INFORMATION

Used in oral care formulations to round out mint notes and in coffee flavors.

OCCURRENCE IN NATURE

Found in licorice and honey.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	FAIR
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	FAIR
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

> 12 HOURS | 00 DAYS | 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 1%

TECHNICAL DATA

Flash Point °C	74°C
GC	98% min. as Angelica Lactone alpha, 1% max. as Angelica Lactone beta
CAS No.	591-12-8
FEMA / GRAS No.	3293
CLogP	0.03

Optical Rotation	-
Appearance	Yellow clear liquid
Molecular Weight	98.1
Vapor Pressure	52.300 Pa at 25°C



CAS No.51411-24-6

Sustainable Scent™
Chiraroma®

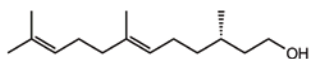
Biocyclamol®

FLORAL GREEN CITRUS WHITE FLORAL



CHEMICAL STRUCTURE

(S,E)-3,7,11-Trimethyldodeca-6,10-dien-1-ol

 $C_{15}H_{28}O$

SYNONYM

l-dihydro farnesol

APPLICATION INFORMATION

Derived from renewable resources. Gives volume and diffusion with a touch of muguet note. Effective at low dosage, with excellent substantivity on dry fabric, it blends easily with most accords. Also exhibits antimicrobial activity.

OCCURRENCE IN NATURE

Found in Cyclamen flower (*C.persicum* and *C.purpurascens*) and their hybrids.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

00 HOURS	00 DAYS	> 05 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Trace to 5%

TECHNICAL DATA

Flash Point °C	148°C
GC	90% min. as Dihydro Farnesol
CAS No.	51411-24-6
FEMA / GRAS No.	4031
CLogP	5.85

Optical Rotation	Max. -0.5°
Appearance	Colorless to pale yellow liquid
Molecular Weight	224.39
Vapor Pressure	0.009 Pa at 25°C



CAS No. 194934-66-2

Sustainable Scent™
Chiraroma®

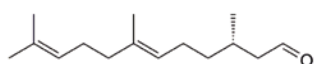
Biomuguet®

FLORAL ALDEHYDIC GREEN AQUATIC

Floral
100%
Biobased
Readily
ISO 16128
Nature
Identical

CHEMICAL STRUCTURE

(3S,6E)-3,7,11-trimethyldodeca-6,10-dienal

 $C_{15}H_{26}O$

SYNONYM

l-dihydro farnesal

APPLICATION INFORMATION

Harmonizes well with marine and citrus notes. In combination with Biocyclamol®, it extends a natural and linear muguet ozonic radiance into the dry down.

OCCURRENCE IN NATURE

Found in lemon flower (*Citrus limon*) and orchid flower (*Phalaenopsis japonica*).

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	FAIR
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	> 01 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

0.2% to 15%

TECHNICAL DATA

Flash Point °C	132°C
GC	97.5% min. as Dihydro Farnesal
CAS No.	194934-66-2 / 51513-58-7
FEMA / GRAS No.	-
CLogP	5.31

Optical Rotation	-9.0° to -3.0°
Appearance	Colorless to pale yellow clear liquid
Molecular Weight	222.37
Vapor Pressure	0.383 Pa at 25°C



CAS No. 488-10-8

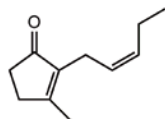
cis-Jasmone

FLORAL JASMINE SPICY FRUITY

Floral  **<50%**
Biobased  Readily  Nature
Identical

CHEMICAL STRUCTURE

(Z)-3-Methyl-2-(pent-2-enyl)cyclopent-2-en-1-one

 $C_{11}H_{16}O$

SYNONYM

-

APPLICATION INFORMATION

Used in floral fragrances, like jasmine and tuberose. Also used to give a fruity and minty effect.

OCCURRENCE IN NATURE

Found in jasmine, neroli, bergamot, spearmint and peppermint.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

> 24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Trace to 3%

TECHNICAL DATA

Flash Point °C	128°C
GC	98% min. as 3-Methyl-2-(pent-2-enyl)cyclopent-2-en-1-one
CAS No.	488-10-8
FEMA / GRAS No.	3196
CLogP	3.55

Optical Rotation	-
Appearance	Colorless to slightly yellow clear liquid
Molecular Weight	164.25
Vapor Pressure	2.830 Pa at 25°C



CAS No. 5392-40-5

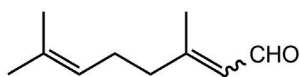
Citral Extra

CITRUS LEMON VERBENA PEELY

Citrus  **<50%**
Biobased Partially Nature
Identical

CHEMICAL STRUCTURE

3,7-Dimethylocta-2,6-dienal



$C_{10}H_{16}O$

SYNONYM

Citral

APPLICATION INFORMATION

Widely used in many types of accords, mainly in citrus fragrances. Gives freshness and lift.

OCCURRENCE IN NATURE

Main constituent of oils of lemongrass and Litsea cubeba. Characteristic constituent of oils of lemon and lime.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	POOR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	FAIR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

> 24 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	104°C
GC	97% min. as Neral + Geranial
CAS No.	5392-40-5
FEMA / GRAS No.	2303
CLogP	3.45

Optical Rotation	-
Appearance	Yellow liquid
Molecular Weight	152.24
Vapor Pressure	12.200 Pa at 25°C



CAS No. 7540-51-4

Sustainable Scent™
Chiraroma®

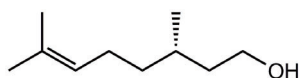
l-Citronellol

FLORAL CITRUS ROSE LEMON

Floral **100%** Biobased  Readily  ISO 16128  Nature Identical

CHEMICAL STRUCTURE

(S)-3,7-Dimethyloct-6-en-1-ol

 $C_{10}H_{20}O$

SYNONYM

-

APPLICATION INFORMATION

Widely used in many perfume compositions. Gives a clean, fresh, and natural rosy note to fragrances.

OCCURRENCE IN NATURE

Found in geranium oil.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

> 24 HOURS	00 DAYS	00 WEEKS
---------------	------------	-------------

BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	102°C
GC	99% min. as Citronellol
CAS No.	7540-51-4, 106-22-9
FEMA / GRAS No.	2309
CLogP	3.56

Optical Rotation	-5.5° to -3.5°
Appearance	Colorless clear liquid
Molecular Weight	156.27
Vapor Pressure	2.260 Pa at 25°C



CAS No. 67601-05-2

Chiraroma®

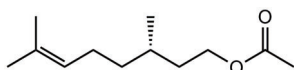
l-Citronellyl Acetate

FLORAL FRUITY ROSE SWEET

Floral  **≥75%**
Biobased  Readily  ISO 16128  Nature
Identical

CHEMICAL STRUCTURE

(S)-3,7-Dimethyloct-6-enyl acetate

 $C_{12}H_{22}O_2$

SYNONYM

Dihydrogeranyl acetate

APPLICATION INFORMATION

Extensively used in perfumery. Gives a fresh-rosy, fruity odor to many floral compositions from geranium to muguet.

OCCURRENCE IN NATURE

Found in citronella oil, rose oil, geranium oil and lemon oil.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	POOR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

> 12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 15%

TECHNICAL DATA

Flash Point °C	122°C
GC	98% min. as Citronellyl Acetate
CAS No.	67601-05-2, 150-84-5
FEMA / GRAS No.	2311
CLogP	4.56

Optical Rotation	-5.0° to -1.0°
Appearance	Colorless clear liquid
Molecular Weight	198.31
Vapor Pressure	7.010 Pa at 25°C



CAS No. 4430-31-3

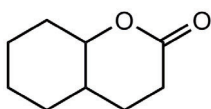
Cyclohexyl Lactone

FRUITY HERBAL SWEET NUTTY

Fruity  **<50%**
Biobased Inherently

CHEMICAL STRUCTURE

Octahydro-2H-chromen-2-one



$C_9H_{14}O_2$

SYNONYM

Octahydro-2H-1-benzopyran-2-one

APPLICATION INFORMATION

Gives body to fruity-floral compositions. Used in combination with coumarin and also with powdery notes.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

00 HOURS 00 DAYS >01 WEEKS

BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Up to 3%

TECHNICAL DATA

Flash Point °C	152°C
GC	98% min. as Cyclohexyl Lactone
CAS No.	4430-31-3
FEMA / GRAS No.	3791
CLogP	1.55

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	154.21
Vapor Pressure	1,140 Pa at 25°C



CAS No.67874-72-0

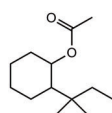
Cypressan

HERBAL WOODY FRUITY PINE

Herbal  **<50%**
Biobased  **NOT**
Assessed

CHEMICAL STRUCTURE

2-tert-Pentylcyclohexyl acetate



$C_{13}H_{24}O_2$

SYNONYM

-

APPLICATION INFORMATION

Used in perfumery for pine fragrances and generally as a modifier for woody, powdery and herbaceous -camphoraceous fragrance types.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	GOOD

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

>24 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	>100°C
GC	97% min. as sum of isomers
CAS No.	67874-72-0
FEMA / GRAS No.	-
CLogP	4.91

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	212.33
Vapor Pressure	3.540 Pa at 25°C



CAS No. 70788-30-6

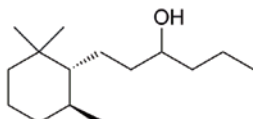
Chiraroma®

Dextramber®

AMBER WOODY DRY POWERFUL

Amber  **≥50%**
Biobased Readily  ISO 16128  High Impact 

CHEMICAL STRUCTURE

Cyclohexanepropanol, 2,2,6-trimethyl- α -propyl $C_{15}H_{30}O$

SYNONYM

-

APPLICATION INFORMATION

An exceptionally powerful amber woody note, complemented by a dry clean facet and a touch of animalic warmth reminiscent of androstenol.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

00	00	>04
HOURS	DAYS	WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 1%

TECHNICAL DATA

Flash Point °C	100°C
GC	98% min. as sum of isomers
CAS No.	70788-30-6
FEMA / GRAS No.	-
CLogP	5.80

Optical Rotation	7.0° to 17.0°
Appearance	Colorless to pale yellow liquid
Molecular Weight	226.4
Vapor Pressure	0.0127 Pa at 25°C



CAS No. 17283-81-7

Dihydro beta Ionone

FLORAL VIOLET WOODY GREEN

Floral

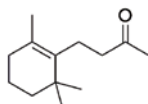
<50%
Biobased

Inherently

Nature
Identical

CHEMICAL STRUCTURE

4-(2,6,6-trimethyl-1-cyclohexen-1-yl)butan-2-one
(and isomers)

 $C_{13}H_{22}O$

SYNONYM

2- butanone, 4-(2,6,6-trimethyl-1-cyclohexen-1-yl)-

APPLICATION INFORMATION

Used for woody and ambery note. It gives volume and have good combination with floral notes.

OCCURRENCE IN NATURE

Found in boronia, Champaca

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	>02 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	127°C
GC	85% min. as Dihydro Beta Ionone
CAS No.	17283-81-7
FEMA / GRAS No.	3626
CLogP	4.35

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	194.30
Vapor Pressure	2.15 Pa at 25°C



CAS No. 68680-98-8

Chiraroma®

L-Dihydro Citronellol

FLORAL ROSY WAXY CITRUS

Floral

100% Biobased

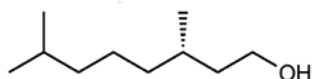
Readily

ISO 16128

Nature Identical

CHEMICAL STRUCTURE

(S)-3,7-Dimethyloctan-1-ol

 $C_{10}H_{22}O$

SYNONYM

-

APPLICATION INFORMATION

Used in rose, white floral, and citrus perfume applications. Gives a clear, fresh and natural rosy note to fragrances.

OCCURRENCE IN NATURE

Found in Juniperus phoenicea extracts, wild onion trees, Achyrocline satureioides essential oils and tomato juice.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	GOOD

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

0.5% to 10%

TECHNICAL DATA

Flash Point °C	112°C
GC	98% min. as Dihydro Citronellol
CAS No.	68680-98-8, 106-21-8
FEMA / GRAS No.	2391
CLogP	3.64

Optical Rotation	-4.8° to -3.8°
Appearance	Colorless clear liquid
Molecular Weight	158.29
Vapor Pressure	4.740Pa at 25°C



CAS No. 6290-17-1

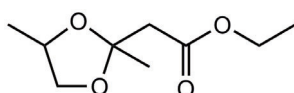
Dimethyl Dioxolan

FRUITY APPLE STRAWBERRY SWEET

Fruity  **<50%**
Biobased  NOT
Assessed

CHEMICAL STRUCTURE

Ethyl 2-(2,4-dimethyl-1,3-dioxolan-2-yl)acetate



$C_9H_{16}O_4$

SYNONYM

Ethyl 2,4-dimethyl-1,3-dioxolane-2-acetate

APPLICATION INFORMATION

Used in apple, fresh fruit, herbal and strawberry accords.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	POOR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	FAIR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	GOOD
Hair	POOR

TENACITY ON BLOTTER

>10 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 30%

TECHNICAL DATA

Flash Point °C	>91°C
GC	97% min. sum of isomers
CAS No.	6290-17-1
FEMA / GRAS No.	-
CLogP	1.72

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	188.22
Vapor Pressure	7.950Pa at 25°C



CAS No. 774-55-0

Florantone T

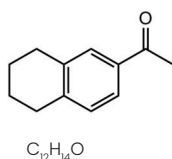
FLORAL ORANGE FLOWER MUSK

Floral



CHEMICAL STRUCTURE

1-(5,6,7,8-Tetrahydronaphthalen-2-yl)ethanone



SYNONYM

1-(5,6,7,8-Tetrahydro-2-naphthyl)ethan-1-one

APPLICATION INFORMATION

Novel methyl anthranilate note, yet extremely stable and resistant to discoloration.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	>01 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	154°C
GC	98% min. as Acetyl Tetralin
CAS No.	774-55-0
FEMA / GRAS No.	-
CLogP	3.64

Optical Rotation	-
Appearance	Colorless liquid
Molecular Weight	174.24
Vapor Pressure	0.519Pa at 25°C



CAS No. 106-24-1

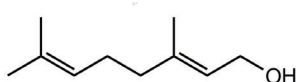
Geraniol Extra

FLORAL ROSE SWEET PETAL

Floral    

CHEMICAL STRUCTURE

(E)-3,7-Dimethylocta-2,6-dien-1-ol

 $C_{10}H_{18}O$

SYNONYM

Geraniol

APPLICATION INFORMATION

Used in all types of fragrances especially rose accords and with other florals. Used in personal care, household, soaps, detergents and also fine perfumery.

OCCURRENCE IN NATURE

Main constituent of oils of palmarosa, rose, geranium, citronella, and a minor constituent of oils of verbena, lemongrass, rosewood, linaloe, petitgrain and numerous other oils.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 30%

TECHNICAL DATA

Flash Point °C	101°C
GC	98% min. as Geraniol
CAS No.	106-24-1
FEMA / GRAS No.	2507
CLogP	3.47

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	154.25
Vapor Pressure	2.120Pa at 25°C



CAS No. 105-87-3

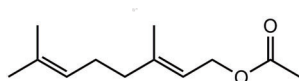
Geranyl Acetate

FLORAL ROSE SWEET FRUITY

Floral  **≥75%**
Biobased  **NOT**
Assessed  **ISO 16128**  **Nature**
Identical

CHEMICAL STRUCTURE

(E)-3,7-Dimethylocta-2,6-dienyl acetate

 $C_{12}H_{20}O_2$

SYNONYM

Geranyl acetate

APPLICATION INFORMATION

Widely used in floral, fruity, herbaceous and citrus fragrances. Found in various fruit, berry, floral and spice flavors.

OCCURRENCE IN NATURE

Found in oils of Dancus Carota L., citronella, lemongrass, palmarosa, geranium and others.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 25%

TECHNICAL DATA

Flash Point °C	102°C
GC	97% min. as Geranyl Acetate
CAS No.	105-87-3
FEMA / GRAS No.	2509
CLogP	4.48

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	196.29
Vapor Pressure	6.170Pa at 25°C



CAS No.40596-76-7

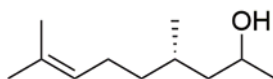
Chiraroma®
Hedirosa®

CITRUS FLORAL GRAPEFRUIT RHUBARB

Citrus  **≥75%**
Biobased Readily ISO 16128

CHEMICAL STRUCTURE

(4S)-4,8-Dimethyl-7-nonen-2-ol



C₁₁H₂₂O

SYNONYM

(4S)-4,8- dimethyl non-7-en-2-ol

APPLICATION INFORMATION

The additional of 0.1-3% to a fragrance compound gives naturalness and freshness to a wide range of floral notes and even citrus fruity notes.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>24 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

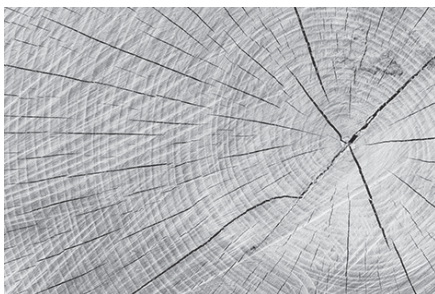
TYPICAL USE LEVEL

Up to 3%

TECHNICAL DATA

Flash Point °C	102°C
GC	98.0% min. as Hedirosa
CAS No.	40596-76-7
FEMA / GRAS No.	-
CLogP	3.97

Optical Rotation	-
Appearance	Colorless liquid
Molecular Weight	170.3
Vapor Pressure	1.59 Pa at 25°C



CAS No. 28219-60-5

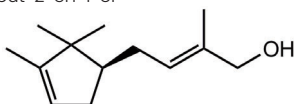
Chiraroma®
Hindinol®

WOODY SANDALWOOD CREAMY POWERFUL

Woody  **≥75%**  
Biobased Inherently ISO 16128

CHEMICAL STRUCTURE

(R,E)-2-Methyl-4-(2,2,3-trimethylcyclopent-3-enyl)but-2-en-1-ol

 $C_{13}H_{22}O$

SYNONYM

(R)-2-Methyl-4-(2,2,3-trimethyl-3-cyclopenten-1-yl)-2-buten-1-ol

APPLICATION INFORMATION

Widely used in all product applications. Provides a natural and fresh character.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	>02 WEEKS
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BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	131°C
GC	90% min. as Hindinol
CAS No.	28219-60-5, 185068-68-2, 198405-38-8
FEMA / GRAS No.	-
CLogP	4.65

Optical Rotation	-2.0° to -1.0°
Appearance	Colorless to pale yellow liquid
Molecular Weight	194.32
Vapor Pressure	0.032Pa at 25°C



CAS No. 28462-85-3

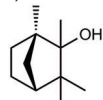
Humus Ether®

EARTHY GREEN MOSSY WOODY

Earthy  **≥50%** Biobased  Partially  High Impact

CHEMICAL STRUCTURE

(1S,4R)-1,2,3,3-Tetramethylbicyclo[2.2.1]heptan-2-ol (pure material)



$C_{11}H_{20}O$

SYNONYM

Methyl Fenchol 50% in dipropylene glycol

APPLICATION INFORMATION

Adds a natural, powerful and very diffusive earthy green odor reminiscent of fresh soil and morning dew. This material has excellent stability.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	GOOD

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

00 HOURS | 02 DAYS | 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

0.01% to 0.2%

TECHNICAL DATA

Flash Point °C	98°C
GC	50% solution in Dipropylene glycol
CAS No.	28462-85-3(pure material) / 25265-71-8(dipropylene glycol)
FEMA / GRAS No.	-
CLogP	3.31

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	168.80
Vapor Pressure	4.270Pa at 25°C



CAS No. 127-41-3

Ionone alpha

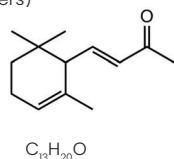
FLORAL VIOLET WOODY FRUITY

Floral



CHEMICAL STRUCTURE

(E)-4-(2,6,6-Trimethylcyclohex-2-enyl)but-3-en-2-one (and isomers)

 $C_{13}H_{20}O$

SYNONYM

4-(2,6,6-Trimethylcyclohex-2-en-1-yl)-but-3-ene-2-one

APPLICATION INFORMATION

Used in many floral accords. Gives a violet flower nuance to compositions, but is also used in rose, woody, amber, balsamic and powdery fragrances.

OCCURRENCE IN NATURE

Found in oils of flowers of Boronia Megastigma Nees, renna, in violet moss and in oil of costus root.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	>02 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	110°C
GC	70% min. as Ionone Alpha
CAS No.	127-41-3, 14901-07-6
FEMA / GRAS No.	2594
CLogP	4.29

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	192.30
Vapor Pressure	3.620Pa at 25°C



CAS No. 24851-98-7

Jasmodione®

FLORAL GREEN CITRUS JASMIN

Floral

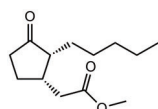
<50%
Biobased

Inherently

Nature
Identical

CHEMICAL STRUCTURE

Methyl 2-((1S*,2R*)-3-oxo-2-pentylcyclopentyl)acetate

 $C_{13}H_{22}O_3$

SYNONYM

Methyl dihydrojasmonate

APPLICATION INFORMATION

Blends very well most floral accords with wonderful booster effects. Very useful in fine fragrance and all types products.

OCCURRENCE IN NATURE

Found in sea lavender.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	POOR
Antiperspirants	pH 3.5	POOR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	POOR
Soaps	pH 10	POOR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	POOR
Wet Fabric	POOR
Hair	FAIR

TENACITY ON BLOTTER

00 HOURS	00 DAYS	>02 WEEKS
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BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

0.5% to 10%

TECHNICAL DATA

Flash Point °C	>100°C
GC	95% min. as total isomers Stabilized with 0.05% BHT
CAS No.	24851-98-7
FEMA / GRAS No.	3408
CLogP	2.98

Optical Rotation	-
Appearance	Colorless liquid
Molecular Weight	226.32
Vapor Pressure	0,158Pa at 25°C



CAS No. 107-75-5

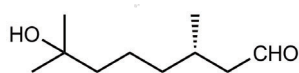
Sustainable Scent™
Chiraroma®***l*-Laurinal®**

FLORAL MUGUET GREEN SWEET

Floral  100%
Biobased  Readily  ISO 16128  Nature
Identical

CHEMICAL STRUCTURE

(S)-7-Hydroxy-3,7-dimethyloctanal

 $C_{10}H_{20}O_2$

SYNONYM

l-Hydroxycitronellal

APPLICATION INFORMATION

Used almost in any floral accord, but mainly in muguet and lilac.

OCCURRENCE IN NATURE

A volatile constituent of large cardamom (*Amomum subulatum* Roxb.).

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	POOR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	126°C
GC	98% min. as Hydroxycitronellal
CAS No.	107-75-5, 34212-53-8
FEMA / GRAS No.	2583
CLogP	2.11

Optical Rotation	-13.2° to -11.8°
Appearance	Colorless clear liquid
Molecular Weight	172.27
Vapor Pressure	0.773Pa at 25°C



CAS No. 35931-93-2

Sustainable Scent™
Chiraroma®

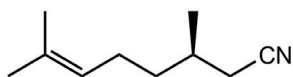
Levocitrile®

CITRUS GREEN FRUITY FLORAL

Citrus   

CHEMICAL STRUCTURE

(R)-3,7-Dimethyloct-6-enenitrile



C₁₀H₁₇N

SYNONYM

(3R)-3,7-Dimethyl-6-octenenitrile

APPLICATION INFORMATION

Much cleaner and closer to lemon than the commonly known racemic mixture. Has an outstanding stability across the pH range, including inorganic acid cleaners.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	GOOD

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>06 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	122°C
GC	99% min. as Citronellyl Nitrile
CAS No.	35931-93-2, 51566-62-2
FEMA / GRAS No.	-
CLogP	3.55

Optical Rotation	-12.0° to -6.0°
Appearance	Colorless liquid
Molecular Weight	151.26
Vapor Pressure	8.840Pa at 25°C



CAS No. 5989-54-8

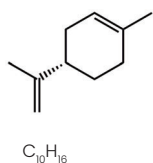
l-Limonene - 80

CITRUS ORANGE MINTY WOODY

Citrus    

CHEMICAL STRUCTURE

(S)- 1-Methyl-4-(1-methylethenyl)cyclohexen



SYNONYM

(S)-p-Mentha-1,8-diene

APPLICATION INFORMATION

Used in perfumery and in citrus fragrances to give lift and freshness. Combines very well with any other citrus note such as bergamot, orange, lemon, mandarin and grapefruit.

OCCURRENCE IN NATURE

Found in several pine needle oils, the cone oil of *Abies alba*, some turpentine oils, star anise, peppermint and spearmint.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	POOR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

>01 HOURS | 00 DAYS | 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 50%

TECHNICAL DATA

Flash Point °C	53°C
GC	97% min. as Limonene
CAS No.	5989-54-8
FEMA / GRAS No.	-
CLogP	4.83

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	136.24
Vapor Pressure	193Pa at 25°C



CAS No. 5182-36-5

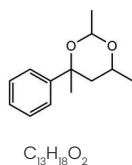
Lorexan®

CITRUS FRESH GARDENIA GREEN

Citrus  **<50%**
Biobased  **NOT**
Assessed

CHEMICAL STRUCTURE

2,4,6-Trimethyl-4-phenyl-1,3-dioxane



SYNONYM

-

APPLICATION INFORMATION

Used in many perfume compositions especially in citrus and floral accords. Gives a citrus clean natural note.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

00 | >02 | 00
HOURS | DAYS | WEEKS

BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

Up to 6%

TECHNICAL DATA

Flash Point °C	114°C
GC	97% min. sum of 2 isomers
CAS No.	5182-36-5
FEMA / GRAS No.	-
CLogP	3.11

Optical Rotation	-
Appearance	Colorless liquid
Molecular Weight	206.85
Vapor Pressure	0.391 Pa at 25°C



CAS No. 2442-10-6

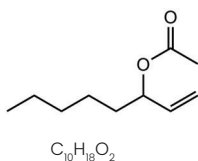
Matsutake Acetate

HERBAL FRUITY MINT FLORAL

Herbal  **<50%**
Biobased  **NOT**
Assessed  **Nature**
Identical  **High**
Impact

CHEMICAL STRUCTURE

Oct-1-en-3-yl acetate



SYNONYM

Amyl vinyl carbinyl acetate, 3-Acetoxy-1-octene

APPLICATION INFORMATION

Used in herbal-lavender fragrances, and in green and floral-violet accords. Also used in mushroom flavor applications.

OCCURRENCE IN NATURE

Found in peppermint, spearmint and lavender.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	FAIR
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 1%

TECHNICAL DATA

Flash Point °C	65°C
GC	96% min. as 3-Acetoxy-1-octene
CAS No.	2442-10-6
FEMA / GRAS No.	3582
CLogP	3.60

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	170.25
Vapor Pressure	54.900 Pa at 25°C



CAS No. 3391-86-4

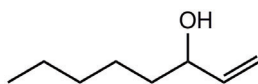
Matsutakeol

EARTHY FLORAL HERBAL LAVENDER

Earthy  **<50%**
Biobased  **NOT**
Readily  **Nature**
Identical  **High**
Impact

CHEMICAL STRUCTURE

Oct-1-en-3-ol

 $C_8H_{16}O$

APPLICATION INFORMATION

Can be used for the reconstitution of essential oils such as Lavandin and in the creation of herbaceous -lavandaceous fragrances.

OCCURRENCE IN NATURE

Found in lavender, peppermint, mushrooms and clary sage.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

>08 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 1%

TECHNICAL DATA

Flash Point °C	69°C
GC	98% min. as Oct-1-en-3-ol
CAS No.	3391-86-4
FEMA / GRAS No.	2805
CLogP	2.60

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	128.22
Vapor Pressure	31.700 Pa at 25°C



CAS No. 89-78-1

Sustainable Scent™
Chiraroma®

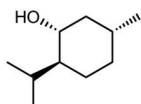
l-Menthol

MINT HERBAL SWEET MEDICINAL

Mint



CHEMICAL STRUCTURE

(1*R*,2*S*,5*R*)-2-Isopropyl-5-methylcyclohexanol $C_{10}H_{20}O$

SYNONYM

(1*R*,2*S*,5*R*)-(-)-Menthol

APPLICATION INFORMATION

Used in perfumery to give power, lift, and freshness. Widely used in flavors, cosmetics, pharmaceutical dentifrices and tobacco flavors.

OCCURRENCE IN NATURE

Found in oil of peppermint, Japanese mint and in minor quantities in oil of geranium.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	POOR
Wet Fabric	POOR
Hair	GOOD

TENACITY ON BLOTTER

>02 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 3%

TECHNICAL DATA

Flash Point °C	92°C
GC	99.9% min. as n-Menthol
CAS No.	89-78-1, 2216-51-5
FEMA / GRAS No.	2665
CLogP	3.38

Optical Rotation	-51.0° to -48.0°
Appearance	White tablet or flakes
Molecular Weight	156.27
Vapor Pressure	1.020 Pa at 25°C



CAS No. 89-80-5

Menthone Natural

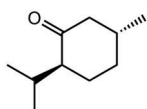
MINT HERBAL SWEET WOODY

Mint



CHEMICAL STRUCTURE

(2S*,5R*)-2-Isopropyl-5-methylcyclohexanone

 $C_{10}H_{18}O$

SYNONYM

trans-p-Menthan-3-one

APPLICATION INFORMATION

Used in perfume compositions such as geranium and lavender. Can be used in traces to give freshness and lift. Used in flavor mainly for dentifrice flavors and synthetic peppermint.

OCCURRENCE IN NATURE

Found in oils of peppermint, Japanese mint, pennyroyal, Micromeria abyssinica benth., geranium and other oils.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	FAIR
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	POOR
Wet Fabric	POOR
Hair	GOOD

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 3%

TECHNICAL DATA

Flash Point °C	74°C
GC	98% min. as $C_{10}H_{18}O$
CAS No.	89-80-5
FEMA / GRAS No.	2667
CLogP	2.87

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	154.25
Vapor Pressure	49.400 Pa at 25°C



CAS No. 89-80-5

Menthone Synthetic

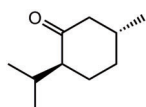
MINT HERBAL SWEET WOODY

Mint



CHEMICAL STRUCTURE

(2S*,5R*)-2-Isopropyl-5-methylcyclohexanone

 $C_{10}H_{18}O$

SYNONYM

trans-p-Menthan-3-one

APPLICATION INFORMATION

Used in perfume compositions such as geranium and lavender. Can be used in traces to give freshness and lift. Used in flavor mainly for dentifrice flavors and synthetic peppermint.

OCCURRENCE IN NATURE

Found in oils of peppermint, Japanese mint, pennyroyal, Micromeria abyssinica benth., geranium and other oils.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	FAIR
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	POOR
Wet Fabric	POOR
Hair	GOOD

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 3%

TECHNICAL DATA

Flash Point °C	84°C
GC	96% min. as Ketones
CAS No.	89-80-5
FEMA / GRAS No.	2667
CLogP	2.87

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	154.53
Vapor Pressure	49.400 Pa at 25°C



CAS No. 2623-23-6

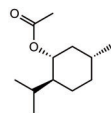
Chiraroma®

l-Menthyl Acetate

HERBAL FLORAL MINTY FRESH

Herbal  **≥75%**
Biobased  **NOT**
Assessed  **ISO 16128**  **Nature**
Identical

CHEMICAL STRUCTURE

(1*R*,2*S*,5*R*)-2-Isopropyl-5-methylcyclohexyl acetate $C_{12}H_{22}O_2$

SYNONYM

l-Menthyl acetate

APPLICATION INFORMATION

Milder than menthol, can be used in floral compositions. Performs well in soaps, giving freshness and lift without a very strong minty note.

OCCURRENCE IN NATURE

Found in Mint oils.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	POOR
Wet Fabric	POOR
Hair	GOOD

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	87°C
GC	98% min. as Menthyl Acetate
CAS No.	2623-23-6, 89-48-5
FEMA / GRAS No.	2668
CLogP	4.39

Optical Rotation	-75° to -70°
Appearance	Colorless to pale yellow liquid
Molecular Weight	198.31
Vapor Pressure	12.200 Pa at 25°C



CAS No. 6413-10-1

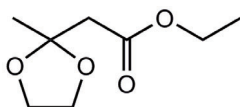
Methyl Dioxolan

FRUITY APPLE JASMINE MELON

Fruity  **<50%**
Biobased  NOT
Assessed

CHEMICAL STRUCTURE

Ethyl 2-(2-methyl-1,3-dioxolan-2-yl)acetate

 $C_8H_{14}O_4$

SYNONYM

Ethyl 2-methyl-1,3-dioxolane-2-acetate

APPLICATION INFORMATION

Most often incorporated into fruity-floral creations for soaps, detergents and toiletries. Gives a fragrance body and tenacity.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	POOR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	FAIR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	GOOD
Hair	POOR

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

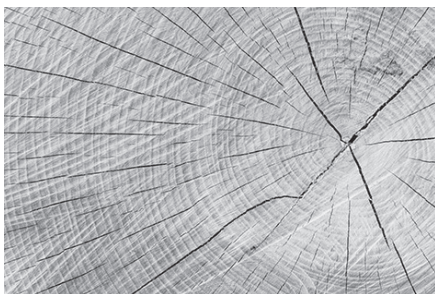
TYPICAL USE LEVEL

Up to 20%

TECHNICAL DATA

Flash Point °C	92°C
GC	99% min. as Methyl Dioxolan
CAS No.	6413-10-1
FEMA / GRAS No.	4477
CLogP	1.30

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	174.20
Vapor Pressure	18.100 Pa at 25°C



CAS No. 127-42-4

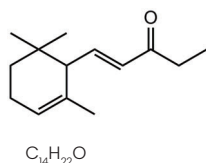
Methyl Ionone alpha

WOODY FLORAL VIOLET ORRIS

Woody **<50%**
Biobased  NOT
Assessed

CHEMICAL STRUCTURE

1-(2,6,6-Trimethylcyclohex-2-enyl)pent-1-en-3-one



SYNONYM

[R-(E)]-1-(2,6,6-Trimethyl-2-cyclohexen-1-yl)pent-1-en-3-one

APPLICATION INFORMATION

Used in many floral fragrances, particularly violet. Blends with and supports woody and leathery notes, also violet, fruit, berry, and nut flavors.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	>01 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

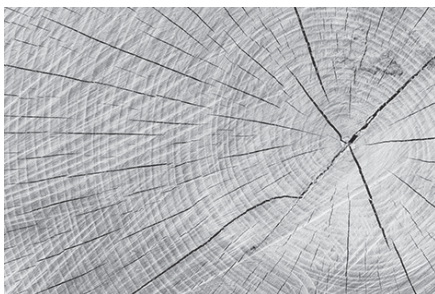
TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	118°C
GC	85% min. isomers
CAS No.	127-42-4 (majority product)
FEMA / GRAS No.	2711
CLogP	4.78

Optical Rotation	-
Appearance	Pale yellow liquid
Molecular Weight	206.33
Vapor Pressure	0.868 Pa at 25°C



CAS No. 127-51-5

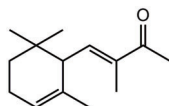
Methyl Ionone gamma EQ

WOODY FLORAL VIOLET ORRIS

Woody  **<50%**
Biobased  **NOT**
Readily

CHEMICAL STRUCTURE

3-Methyl-4-(2,6,6-trimethylcyclohex-2-enyl)but-3-en-2-one

 $C_{14}H_{22}O$

SYNONYM

3-Methyl-4-(2,6,6-trimethyl-2-cyclohexen-1-yl)-3-buten-2-one

APPLICATION INFORMATION

Used in many floral fragrances, particularly violet. Blends with and supports woody, leathery and oriental accords.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00	00	>01
HOURS	DAYS	WEEKS

BLOOM DIFFUSIVITY

VERY DIFFUSIVE

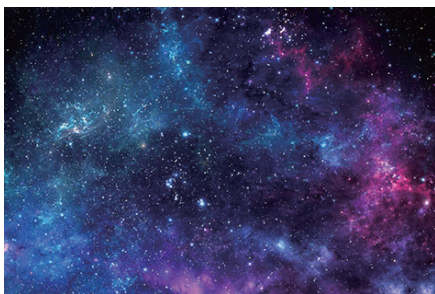
TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	118°C
GC	90% min. isomers, 80-90% Isomethyl Ionone alpha
CAS No.	127-51-5
FEMA / GRAS No.	2714
CLogP	4.84

Optical Rotation	-
Appearance	Pale yellow liquid
Molecular Weight	206.33
Vapor Pressure	1.300 Pa at 25°C



CAS No. 541-91-3

Chiraroma®

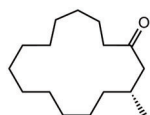
l-Muscone

MUSK POWDERY ANIMALIC SWEET

Musk  **<50%**
Biobased  Readily  Nature
Identical  High
Impact

CHEMICAL STRUCTURE

(R)-3-Methylcyclopentadecanone

 $C_{16}H_{30}O$

SYNONYM

l-Muscone

APPLICATION INFORMATION

Very effective in all kinds of fragrances, providing elegant, warm and powdery musky notes. Adds lift and diffusion to any perfume.

OCCURRENCE IN NATURE

The key perfumery component found in the male musk deer and *Moschus moschiferus*.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	<01 WEEKS
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BLOOM DIFFUSIVITY

FAIRLY DIFFUSIVE

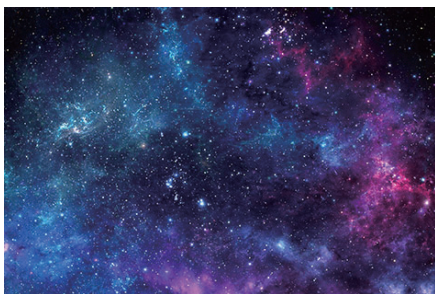
TYPICAL USE LEVEL

Trace to 2%

TECHNICAL DATA

Flash Point °C	166°C
GC	99% min. as Muscone
CAS No.	541-91-3, 10403-00-6
FEMA / GRAS No.	3434
CLogP	5.96

Optical Rotation	-12.0° to -9.0°
Appearance	Colorless to pale yellow liquid
Molecular Weight	238.42
Vapor Pressure	0.063 Pa at 25°C



CAS No. 105-95-3

Musk T®

MUSK SWEET FLORAL AMBER

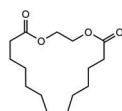
Musk

 **<50%**
Biobased

 Readily

CHEMICAL STRUCTURE

1,4-Dioxacycloheptadecane-5,17-dione

 $C_{15}H_{26}O_4$

SYNONYM

Ethylene brassylate

APPLICATION INFORMATION

Can be used in all types of fragrance accords, from floral to animalic. It gives an outstanding tenacity to perfumes and it performs well in all types of applications.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	FAIR
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

00 HOURS	00 DAYS	>01 WEEKS
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BLOOM DIFFUSIVITY

FAIRLY DIFFUSIVE

TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	192°C
GC	93% min. as Ethylene Brassylate
CAS No.	105-95-3
FEMA / GRAS No.	3543
CLogP	4.71

Optical Rotation	-
Appearance	Colorless to pale yellow clear, rather viscous liquid
Molecular Weight	270.37
Vapor Pressure	0.0001 Pa at 25°C



CAS No. 123-35-3

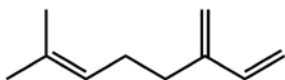
Myrcene P&F T500

CITRUS HERBAL BALSAMIC ROOTY

Citrus **100%** Biobased **Inherently** ISO 16128 **Nature Identical**

CHEMICAL STRUCTURE

7-Methyl-3-methyleneocta-1,6-diene



$C_{10}H_{16}$

SYNONYM

7-Methyl-3-methyleneocta-1,6-diene

APPLICATION INFORMATION

Used in citrus and spicy accords, mainly in household products. Can give a fresh note.

OCCURRENCE IN NATURE

Found in oil of hops, verbena oil, galbanum oil, Formosan and West Indian lemongrass oil.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	FAIR
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	FAIR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

>01 HOURS | 00 DAYS | 00 WEEKS

BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

1% to 5%

TECHNICAL DATA

Flash Point °C	49°C
GC	85% min. as Myrcene
CAS No.	123-35-3
FEMA / GRAS No.	2762
CLogP	4.88

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	136.24
Vapor Pressure	320 Pa at 25°C



CAS No. 106-25-2

Sustainable Scent™
Chiraroma®

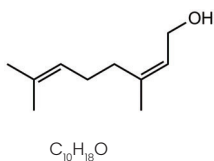
Nerol Extra

FLORAL ROSE CITRUS FRESH

Floral    

CHEMICAL STRUCTURE

(Z)-3,7-Dimethylocta-2,6-dien-1-ol



SYNONYM

Nerol

APPLICATION INFORMATION

Widely used in floral accords. Gives freshness to rose accords, but it is also used in sweet-floral fragrances and citrus notes.

OCCURRENCE IN NATURE

Found in many oils along with geraniol, like petitgrain, neroli, bergamot, lemon, lime, grapefruit, sweet orange, lemongrass, lavender and others.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	FAIR

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

Up to 20%

TECHNICAL DATA

Flash Point °C	103°C
GC	97% min. as Nerol
CAS No.	106-25-2
FEMA / GRAS No.	2770
CLogP	3.47

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	154.25
Vapor Pressure	2.120 Pa at 25°C



CAS No. 141-12-8

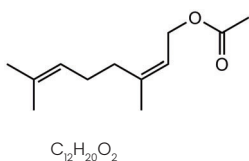
Neryl Acetate

FLORAL ROSE FRUITY RASPBERRY

Floral  **≥75%**
Biobased  Readily  ISO 16128  Nature
Identical

CHEMICAL STRUCTURE

(Z)-3,7-Dimethylocta-2,6-dienyl acetate



SYNONYM

Neryl acetate

APPLICATION INFORMATION

Used in floral and fruity compositions to give body and roundness. Particularly effective in jasmine and neroli fragrances. Can also be used in citrus and raspberry flavors and other fruit complexes.

OCCURRENCE IN NATURE

Found in oils of neroli, petitgrain and lemon.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

>24 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 25%

TECHNICAL DATA

Flash Point °C	100°C
GC	97% min. as Neryl Acetate
CAS No.	141-12-8
FEMA / GRAS No.	2773
CLogP	4.48

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	196.29
Vapor Pressure	6.170 Pa at 25°C



CAS No. 128-50-7

Nopol T

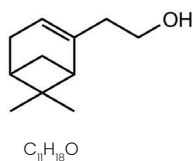
PINE CAMPHOROUS CITRUS WOODY

Pine



CHEMICAL STRUCTURE

2-(6,6-Dimethylbicyclo[3.1.1]hept-2-en-2-yl)ethanol



SYNONYM

Nopol

APPLICATION INFORMATION

Used in fragrances and compositions. Gives a clean note for soaps and detergents.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

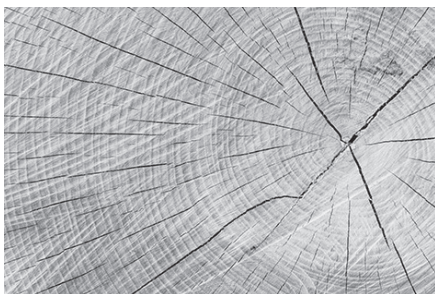
TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	108°C
GC	97% min. as Nopol
CAS No.	128-50-7
FEMA / GRAS No.	3938
CLogP	3.29

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	166.27
Vapor Pressure	0.632 Pa at 25°C



CAS No. 128-51-8

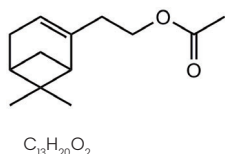
Nopyl Acetate

WOODY SWEET FRUITY FLORAL

Woody  **≥75%**
Biobased Readily ISO 16128

CHEMICAL STRUCTURE

2-(6,6-Dimethylbicyclo[3.1.1]hept-2-en-2-yl) ethyl acetate



SYNONYM

Nopyl acetate

APPLICATION INFORMATION

Used mainly in citrus, orange-flower and fougères. Widely used in household fragrances.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

00 HOURS	>02 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

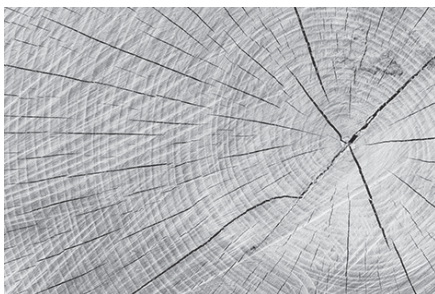
TYPICAL USE LEVEL

Up to 10%

TECHNICAL DATA

Flash Point °C	95°C
GC	98% min. as Nopyl Acetate
CAS No.	128-51-8
FEMA / GRAS No.	-
CLogP	4.30

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	208.30
Vapor Pressure	1,190 Pa at 25°C



CAS No. 54464-57-2

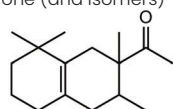
Orbitone® T

WOODY AMBERGRIS FLORAL VIOLET

Woody  **≥75%**
Biobased  **NOT**
Readily  **ISO 16128**

CHEMICAL STRUCTURE

1-(1,2,3,4,5,6,7,8-Octahydro-2,3,8-tetramethyl-2-naphthyl)ethan-1-one (and isomers)

 $C_{16}H_{26}O$

SYNONYM

-

APPLICATION INFORMATION

Widely used in all types of fragrances like fresh-fruity, floral to woody amber. Gives sophisticated body and velvety richness.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 25%

TECHNICAL DATA

Flash Point °C	148°C
GC	90% min. sum isomers
CAS No.	54464-57-2, 68155-66-8, 68155-67-9
FEMA / GRAS No.	-
CLogP	5.18

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	234.38
Vapor Pressure	0.147 Pa at 25°C



CAS No. 99-83-2

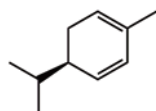
Phellandrene

CITRUS LIME PEPPER JUNIPER

Citrus **100%** Biobased Inherently ISO 16128 Nature Identical

CHEMICAL STRUCTURE

(R) -5-Isopropyl-2-methylcyclohexa-1,3-diene



C₁₀H₁₆

SYNONYM

(-)-(R)-.α.-Phellandrene

APPLICATION INFORMATION

Used in citrus, spicy and geranium accords.

OCCURRENCE IN NATURE

Found as main constituent in oils of *Ridolfia Segetum*, *Elemi*, and as minor constituent in oils such as eucalyptus, melaleuca, fennel and ginger.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	FAIR

TENACITY ON BLOTTER

>02 HOURS | 00 DAYS | 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

1% to 5%

TECHNICAL DATA

Flash Point °C	53°C
GC	85% min. as Phellandrene alpha
CAS No.	99-83-2
FEMA / GRAS No.	2856
CLogP	4.62

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	136.24
Vapor Pressure	255 Pa at 25°C



CAS No. 80-56-8

Pinene alpha

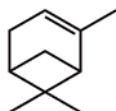
PINE HERBAL CAMPHOROUS WOODY

Pine



CHEMICAL STRUCTURE

2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene

 $C_{10}H_{16}$

SYNONYM

Pin-2(3)-ene

APPLICATION INFORMATION

For use in flavor, fragrance and in essential oil imitations.

OCCURRENCE IN NATURE

Found in turpentine and present in many essential oils. Extracted from the leaves, bark and wood.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

>02 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

1% to 10%

TECHNICAL DATA

Flash Point °C	32°C
GC	97% min. as Pinene alpha
CAS No.	80-56-8
FEMA / GRAS No.	2902
CLogP	4.27

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	136.24
Vapor Pressure	536 Pa at 25°C



CAS No. 18172-67-3

Pinene beta

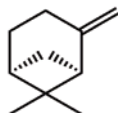
PINE WOODY LIME DRY

Pine



CHEMICAL STRUCTURE

(1S,5S)-6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane

 $C_{10}H_{16}$

SYNONYM

(-)-Pin-2(10)-ene

APPLICATION INFORMATION

Used in flavor formulation with citrus or tropical fruit notes.

OCCURRENCE IN NATURE

Found in turpentine and other essential oils such as lemon, nutmeg, hyssop, coriander and cumin seed.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	GOOD
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

>02 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

FAIRY DIFFUSIVE

TYPICAL USE LEVEL

1% to 10%

TECHNICAL DATA

Flash Point °C	43°C
GC	98% min. as Pinene beta
CAS No.	18172-67-3
FEMA / GRAS No.	-
CLogP	4.35

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	136.24
Vapor Pressure	334 Pa at 25°C



CAS No. 89-81-6

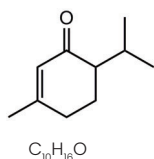
Piperitone 95

HERBAL MINTY CAMPHOROUS FRESH

Herbal    

CHEMICAL STRUCTURE

6-Isopropyl-3-methylcyclohex-2-enone



APPLICATION INFORMATION

Used in minty flavors and fragrances.

OCCURRENCE IN NATURE

Major constituent in oils of Eucalyptus Dives Schauer, and minor constituent in oils of Japanese mint and various Eucalyptus species.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	FAIR
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	POOR
Wet Fabric	POOR
Hair	GOOD

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

0.1% to 10%

TECHNICAL DATA

Flash Point °C	98°C
GC	95% min. as Piperitone
CAS No.	89-81-6
FEMA / GRAS No.	-
CLogP	3.07

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	152.24
Vapor Pressure	13.800 Pa at 25°C



CAS No. 17283-81-7

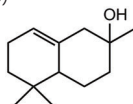
Polyambrol®

AMBER WOODY ANIMALIC EARTHY

Amber  **≥75%**
Biobased Partially ISO 16128  Nature
Identical

CHEMICAL STRUCTURE

2,5,5-Trimethyl-1,2,3,4,4a,5,6,7-octahydronaphthalen-2-ol (and isomers)

 $C_{13}H_{22}O$

SYNONYM

-

APPLICATION INFORMATION

Can be used in small amounts and in all floral perfume types like jasmine, rose and carnation, woody-leathery and also animalic-musky accords.

OCCURRENCE IN NATURE

Found in Ambergris.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

00 HOURS	00 DAYS	>01 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

1% to 5%

TECHNICAL DATA

Flash Point °C	122°C
GC	20% min. as alpha-form
CAS No.	17283-81-7, 41199-19-3, 31499-72-6
FEMA / GRAS No.	-
CLogP	3.90

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	194.32
Vapor Pressure	0.067 Pa at 25°C



CAS No. 79915-74-5

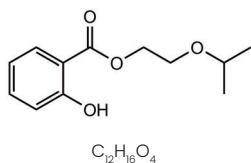
Sakura Salicylate®

FLORAL FRUITY POWDERY SWEET

Floral  **<50%**
Biobased Readily

CHEMICAL STRUCTURE

2-Isopropoxyethyl-2-hydroxybenzoate



SYNONYM

2-Isopropoxyethyl salicylate

APPLICATION INFORMATION

Used in floral fragrances and as a substitute for Benzyl Salicylate.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	FAIR
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	FAIR
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	FAIR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>12 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 5%

TECHNICAL DATA

Flash Point °C	154°C
GC	98% min. as Isopropoxyethyl salicylate
CAS No.	79915-74-5
FEMA / GRAS No.	-
CLogP	3.24

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	224.26
Vapor Pressure	0.006 Pa at 25°C



CAS No. 851768-51-9

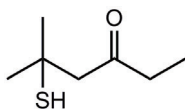
Sauvignone 100

FRUITY GREEN CASSIS SULFUR

Fruity  **<50%**
Biobased  **NOT**
Assessed  **High**
Impact

CHEMICAL STRUCTURE

5-Mercapto-5-methylhexan-3-one (pure material)

 $C_7H_{14}OS$

SYNONYM

5-Mercapto-5-methylhexan-3-one
100ppm in triethyl citrate

APPLICATION INFORMATION

Extremely powerful and diffusive cassis, tropical fruit, guava, passionfruit with a grapefruit nuance. Traces enhance the juicy radiance of fruity floral fragrances.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	POOR
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	FAIR
Soaps	pH 10	FAIR
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	GOOD
Hair	POOR

TENACITY ON BLOTTER

>04 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

VERY DIFFUSIVE

TYPICAL USE LEVEL

0.01% to 0.03%

TECHNICAL DATA

Flash Point °C	188°C
GC	100ppm solution in Triethyl citrate
CAS No.	851768-51-9 (pure material) / 77-93-0 (triethyl citrate)
FEMA / GRAS No.	4769
CLogP	1.56

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	146.25
Vapor Pressure	64.300 Pa at 25°C



CAS No. 562-74-3

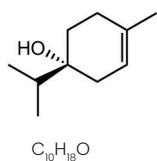
Terpinen-4-ol Natural

CITRUS HERBAL PEPPER EARTHY

Citrus    

CHEMICAL STRUCTURE

(1R)-4-Methyl-1-propan-2-ylcyclohex-3-en-1-ol



SYNONYM

(R)-p- Menth-1-en-4-ol

APPLICATION INFORMATION

Used in flavor and fragrance for citrus and spice types. Used in reconstitutions of essential oils such as lavender and geranium.

OCCURRENCE IN NATURE

Occurs in oil of cypress, juniper berry, Ceylon cardamom, nutmeg, marjoram, thyme, tea tree oil and others.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	FAIR
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	FAIR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>04 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

1% to 5%

TECHNICAL DATA

Flash Point °C	90°C
GC	97% min. as 4-Terpinenol
CAS No.	562-74-3
FEMA / GRAS No.	2248
CLogP	3.33

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	154.25
Vapor Pressure	5.700 Pa at 25°C



CAS No. 586-62-9

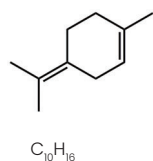
Terpinolene

CITRUS PINE HERBAL ANISIC



CHEMICAL STRUCTURE

1-Methyl-4-(propan-2-ylidene)cyclohex-1-ene



SYNONYM

p-Mentha-1,4(8)-diene

APPLICATION INFORMATION

Low cost fragrance material used in citrus, pinaceous and herbaceous types.

OCCURRENCE IN NATURE

Found in Manila Elemi oil and in the oil derived from Monterey cypress.

STABILITY

Fine Fragrance	-	FAIR
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	POOR
Dry Fabric	POOR
Wet Fabric	POOR
Hair	POOR

TENACITY ON BLOTTER

00 HOURS	>04 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

1% to 40%

TECHNICAL DATA

Flash Point °C	60°C
GC	95% min. as Terpinolene
CAS No.	586-62-9
FEMA / GRAS No.	3046
CLogP	4.88

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	136.24
Vapor Pressure	133 Pa at 25°C



CAS No. 246872-25-3

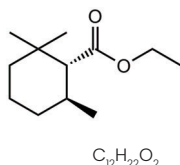
Chiraroma®
Thesaron®

FRUITY FLORAL ROSE AMBER

Fruity   

CHEMICAL STRUCTURE

(1R,6S)-Ethyl 2,2,6-trimethylcyclohexanecarboxylate



SYNONYM

-

APPLICATION INFORMATION

Adds interesting fruity, fresh and rich nuances. Widely used in perfumery compositions requiring a crisp, fruity or rosy note.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	GOOD

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	FAIR
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>24 HOURS 00 DAYS 00 WEEKS

BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

0.1% to 15%

TECHNICAL DATA

Flash Point °C	100°C
GC	99% min. as Ethyl 2,2,6-trimethylcyclohexanecarboxylate
CAS No.	246872-25-3, 22471-55-2
FEMA / GRAS No.	-
CLogP	4.42

Optical Rotation	+9.0 min
Appearance	Colorless clear liquid
Molecular Weight	198.30
Vapor Pressure	7.670 Pa at 25°C



CAS No. 13019-22-2

Sustainable Scent™

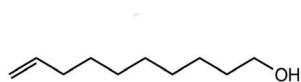
Trepanol®

GREEN FLORAL ALDEHYDIC ROSE



CHEMICAL STRUCTURE

Dec-9-en-1-ol

 $C_{10}H_{20}O$

SYNONYM

Decylenic alcohol

APPLICATION INFORMATION

Used in a wide range of fragrances, especially in fine fragrances and soaps.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	POOR
Soaps	pH 10	GOOD
Powder Detergent	pH 11	GOOD
Bleach	pH 14	FAIR

SUBSTANTIVITY

Skin	GOOD
Dry Fabric	GOOD
Wet Fabric	GOOD
Hair	GOOD

TENACITY ON BLOTTER

>24 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 2%

TECHNICAL DATA

Flash Point °C	114°C
GC	97% min. as Dec-9-en-1-ol
CAS No.	13019-22-2
FEMA / GRAS No.	-
CLogP	3.65

Optical Rotation	-
Appearance	Colorless clear liquid
Molecular Weight	156.27
Vapor Pressure	1.060 Pa at 25°C



CAS No. 87731-18-8

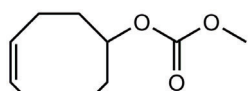
Violet T

GREEN FLORAL VIOLET FRUITY

Green **<50%**
Biobased Inherently High Impact

CHEMICAL STRUCTURE

Cyclooct-4-enyl methyl carbonate

 $C_{10}H_{16}O_3$

SYNONYM

Cyclooct-4-en-1-yl methyl carbonate

APPLICATION INFORMATION

Used in agurmen, aldehydic, alpine bouquet, amaryllis, apple and apple blossom.

OCCURRENCE IN NATURE

Not found in nature.

STABILITY

Fine Fragrance	-	GOOD
Fabric Softener	pH 3	GOOD
Antiperspirants	pH 3.5	GOOD
Toiletry Applications	pH 6	GOOD
Liquid Detergent	pH 9	GOOD
Soaps	pH 10	GOOD
Powder Detergent	pH 11	POOR
Bleach	pH 14	POOR

SUBSTANTIVITY

Skin	FAIR
Dry Fabric	POOR
Wet Fabric	FAIR
Hair	FAIR

TENACITY ON BLOTTER

>08 HOURS	00 DAYS	00 WEEKS
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BLOOM DIFFUSIVITY

DIFFUSIVE

TYPICAL USE LEVEL

Up to 2%

TECHNICAL DATA

Flash Point °C	>100°C
GC	65% min. (main peak)
CAS No.	87731-18-8
FEMA / GRAS No.	-
CLogP	3.27

Optical Rotation	-
Appearance	Colorless to pale yellow liquid
Molecular Weight	184.35
Vapor Pressure	2.410 Pa at 25°C

LEGAL TERMS & CONDITIONS

REGULATORY STATUS AND SAFETY DATA

All products shown in this Compendium are synthetic unless otherwise stated. These products should be used and handled in accordance with the IFRA Code of Practice and applicable Safety Data Sheets. This Compendium lists the products' registration status in only some selected countries/regions, and it is the users' responsibility to confirm the registration status in countries and/or regions of their interest. Note that Takasago is a proud supporter of the Research Institute for Fragrance Materials (RIFM) that evaluates safety of fragrance material by an independent scientific program.

DISCLAIMER

Although the information, regulatory and safety data referred to in this Compendium are, to the best knowledge of Takasago, accurate, it is provided for reference only. Since the environmental and regulatory status and restrictions for chemicals change, it is the users' responsibility to obtain the latest environmental and regulatory status and restrictions before using the products. Also, the users must understand and agree that it shall be solely the users' responsibility to comply with any and all laws and regulations applicable to the use of these ingredients or products.

While Takasago makes its' best efforts to present in this Compendium the latest and accurate information of Takasago's products and recommended use level, that does in no way provide product warranty by Takasago. The users must conduct their own analysis and determine the accuracy, correctness, or suitability of the product and any information provided in this Compendium for their own particular applications. The recommended use level is only given as general suggestion on the typical use level of the ingredient in compounds. The typical use level is suggested as an aid to the perfumers and has no regulatory significance.

Should there be any difference or discrepancy in a products' regulatory status stated in this Compendium and any document provided by a Takasago International company the information provided by the Takasago company to the buyer shall prevail over those stated in this Compendium. Takasago reserves the right to discontinue or add products to its current product line or change specifications of its products, without notice.

STORAGE AND STABILITY

All products should be stored in tightly sealed containers in a cool and dry place protected against direct sun light. Stability descriptions are provided only as suggestions for typical applications. Perfumers are advised to make their own observations on the usefulness and suitability of the ingredients for any particular application. The products should be carefully examined by the users prior to use.

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