

Sustainable Scent™ 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%

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| FRUITY | | | | | | | |
| Angelica Lactone alpha | - | ● | ●●● | ●●● | - | ● | - |
| Cyclohexyl Lactone | - | - | - | ●● | - | - | - |
| Dimethyl Dioxolan | - | - | - | ○ | - | - | - |
| Methyl Dioxolan | - | - | - | ○ | - | - | - |
| Sauvignone 100 | - | - | - | ○ | - | - | ● |
| Thesaron® | ● | - | ●●● | - | ● | - | - |
| GREEN | | | | | | | |
| Trepanol® | - | ● | ●●● | ●●● | - | - | - |
| Violet T | - | - | - | ●● | - | - | ● |
| HERBAL | | | | | | | |
| Cyressan | - | - | - | ○ | - | - | - |
| Matsutake Acetate | - | - | - | ○ | - | ● | ● |
| <i>l</i> -Menthyl Acetate | ● | - | ●● | ○ | ● | ● | - |
| Piperitone 95 | - | - | ●●● | ○ | ● | ● | - |
| MINT | | | | | | | |
| <i>l</i> -Menthol | ● | ● | ●●● | ●●● | ● | ● | - |
| Menthone Natural | - | - | ●●● | - | ● | ● | - |
| Menthone Synthetic | - | - | ●●● | - | ● | ● | - |
| MUSK | | | | | | | |
| Ambretone® | - | - | - | ●●● | - | - | - |
| <i>l</i> -Muscone | ● | - | - | ●●● | - | ● | ● |
| Musk T® | - | - | - | ●●● | - | - | - |
| PINE | | | | | | | |
| Nopol T | - | - | ●● | - | ● | - | - |
| Pinene alpha | - | - | ●●● | ○ | ● | ● | - |
| Pinene beta | - | - | ●●● | ○ | ● | ● | - |
| WOODY | | | | | | | |
| Hindinol® | ● | - | ●● | ●● | ● | - | - |
| Methyl Ionone alpha | - | - | - | ○ | - | - | - |
| Methyl Ionone gamma EQ | - | - | - | - | - | - | - |
| Nopyl Acetate | - | - | ●● | ●●● | ● | - | - |
| Orbitone® T | - | - | ●● | - | ● | - | - |

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TERMS

Chiraroma®

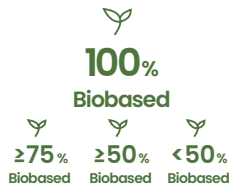
Chiraroma® materials provide the desired optical isomers selectively using Takasago's chiral technology.

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.



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.