

# Cosmetics and Essential oils

THE DATABOOK 2020



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Complexes. This is the first word that comes to mind when we want to describe essential oils, whether it is their composition, their properties, their formulation in a cosmetic product, the regulations that govern them or their labelling... They are nonetheless increasingly present in personal care products... and generate much debate on both their interests and their safety. Often adorned with the status of “necessarily perfect since natural”, they also have their detractors who worry, in the name of their toxic or allergenic potential, about their “over-use”. This dossier brings together the essentials of what it is necessary to know and master in order to properly use and market products containing essential oils.

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# Entering the world of essential oils

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There are about 80,000 species of aromatic and fragrant plants that could provide an essential oil. Cosmetics commonly include about fifty of them in the formulas of its products. Very diverse and just as active, they must first of all, to be used in a relevant and safe way, be well known. What exactly is behind the notion of essential oil? Some... essential data, to know.



## ESSENTIAL OILS: AT THE CORE OF ESSENCES

**Essential oils are volatile substances, odorous fractions extracted from plants, especially from so-called aromatic plants. It is estimated that more than 40,000 species worldwide produce some 5,000 different essential oils, about 100 of which are commonly used in cosmetics.**

They are usually in a liquid, oily but not greasy form since, due to their volatile nature, they evaporate easily. They generally range from colourless to pale yellow, but can also sometimes be blue (German chamomile...), red (savory...), green (bergamot...).

### The essence of plants

All the organs of an aromatic plant can provide an essential oil:

- Flowers: lavender, orange, rose, ylang-ylang, chamomile...
- Leaves and needles: mint, eucalyptus, fir, rosemary, patchouli...
- Roots and rhizomes: ginger, vetiver...
- Fruits, berries and seeds: nutmeg, juniper, pepper, caraway, celery...
- Zests: orange, lemon, grapefruit....
- Barks: cinnamon....
- Wood: rosewood, sandalwood, cedar...
- Resins and gums: myrrh, incense....

It should be noted that several different essential oils can be extracted from the same plant, depending on the organ being exploited, and that they will then have different identities.

The cinnamon tree can thus provide the essential oil of bark (INCI: Cinnamomum Zeylanicum Bark Oil) but also of leaf (INCI: Cinnamomum Zeylanicum Leaf Oil), the bitter orange tree those of its leaves and stems, the bitter little grain (INCI : Citrus Aurantium Amara Leaf/Twig Oil), its flowers, neroli (INCI: Citrus Aurantium Amara Flower Oil) or its zest (INCI: Citrus Aurantium Amara Peel Oil).

And each can then have different properties.

### From the plant to the essence

Two main methods are used to extract an essential oil from its plant carrier.

#### Distillation by steam distillation

Practiced in a still, this technique separates the essential oil (“carried away” by water vapour) from the base plant. The vapour thus loaded with volatile substances is then cooled down, and becomes liquid again. After settling, the essential oil, which is immiscible with water and has a density different from that of water, forms a separate “layer” which can then be removed and the water recycled.

About 90% of plants provide their essential oil through this hydrodistillation.

The yield of this method varies greatly from one plant to another: 6 to 7 kg of clove flower buds are enough to obtain 1 kg of essential oil, while up to 4000 kg of petals are needed for the same quantity of Damask rose essential oil!

#### The expression

It is the ideal method to collect the essential oil from fruit peels and peels, especially those of the Citrus family (orange, lemon, grapefruit...) and consists of a simple cold pressing. It can also be used for whole fruit.

It should be noted that there are other extraction techniques that make it possible to produce substances, certainly different from essential oils, but with which they have similarities. Among these:

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