ARKEMA

OLERIS®

ADVANCED BIO-MATERIALS **FOR FLAVORS & FRAGRANCES** FORMULATIONS

From castor oil to truly renewable building blocks with high performance and unique properties

- NO COMPETITION WITH FOOD / FEED
- NO DEFORESTATION
- HIGHLY PROFITABLE FOR THE FARMERS
- GROWN MAINLY IN INDIA IN MARGINAL SOILS
- THE BEANS ARE CRUSHED TO MAKE ~45% OIL AND 55% CAKE *(SOLD AS FERTILIZER)*

Pragati

Driving more sustainable farming

- → Using good agricultural practices to increase yield and farmer income
- → Efficiently using water resources and maintaining soil fertility
- → Driving adoption of good waste management practices
- → Enabling better health and safety practices, and respecting human rights

A positive climate change impact

→ Oleris® Advanced Bio-Materials are **CARBON NEUTRAL** (ISO 14040).

Cradle to gate is **climate positive** with no need for carbon compensation: the biogenic (atmospheric) CO_2 absorbed during the growth of the castor bean is more than the cumulative CO_2 emission equivalents associated with the entire manufacturing process.

Oleris® Benefits & Certifications

- **Castor Oil Origin**
- **No Animal Origin**
- **High Purity Grades**
- **100% Linear Chain**
- **No Heavy Metals**
- **Readily Biodegradable**
- **KOSHER and HALAL Certified**
- **100 % Biobased Carbon Content (ASTM D6866)** *(except for Oleris® Methyl Undecylenate)*
- **COSMOS APPROVED** *(except for Oleris® Methyl Undecylenate)*
- **LCA data available on demand**

High purity bio-based materials used as **chemical intermediates** in the synthesis of aromatic molecules like lactones, aldehydes or esters.

Their **high reactivity** and their **100% linearity** contribute to increase the yield and to **guarantee** the expected **scent profile**.

n-heptaldehyde

Alpha-Amyl-Cinnamaldehyde (ACA, jasminaldehyde) with floral, jasmine and waxy profile.

Very popular fragrance substance for creating jasmine notes.

Used in perfumes, deodorants, shampoos and soaps.

2-heptylcyclopentanone

Fruity, jasmine, slightly herbaceous notes.

Used in jasmine, honeysuckle and lavender compositions

delta-dodecalactone

Powerful fruity, peach-like and oily odor.

Used in cream and butter flavors.

methyl-2-nonenoate

Intense fresh, green and melon-like notes.

Imparts freshness to floral fragrance compositions. Recommended as a substitute for methyl-2-octynoate.

Cyclic and Linear Acetals (Heptanal dimethyl acetal, Heptanal diethyl acetal, Heptanal-1,2-glyceryl acetal ...)

Green with waxy and fatty nuances. Used in dairy products, confectionery and for vegetable topnote in fragrances.

n-heptanoic acid

Esters, like Allyl heptanoate with fruity and pineapple notes, **nonyl heptanoate** with orange floral rose notes; and also **Amyl heptanoate, Butyl heptanoate, Ethyl heptanoate, Geranyl heptanoate, Propyl heptanoate** with fruity, green, herbal or floral notes. Used in fruity and tropical compositions.

n-heptanol

gamma-decalactone, Peach lactone.

Intensely fruity odor, reminiscent of peaches. Used in perfumery for heavy, fruity flower odors and in aroma compositions, particularly peach flavors.

Esters, like Heptyl acetate, Heptyl benzoate, Heptyl butyrate, Heptyl cinnamate, Heptyl decanoate, Heptyl heptanoate

Green, floral or fruity notes. Used in candy, beverages, frozen dairy, chewing gum.

Undecylenic acid

10-undecenal (aldehyde C11)

Fatty-green, heavy-flowery odor.

A powerful rose and aldehydic notes, extensively used in fine and modern perfumery for quality perfumes.

In perfumery, 10-undecenal is one of the aldehydes essential for creating the ‘‘aldehydic note’’.

10-undecenol

Fatty-green, slightly citrus-like odor. Used to impart natural freshness to floral compositions and soap formulations.

Esters, like Butyl undecylenate, Ethyl undecylenate, Allyl undecylenate, Geranyl undecylenate

Fatty, Buttery, Fruity and Floral notes.

Used in Flavor and Fragrances compositions.

Methyl undecylenate

Can be used in **Macrocyclic Musks, like 15-pentadecanolide**

Highly valuable fragrance material.

Used in fairly large amounts in fine fragrances as a fixative with a delicate musk odor.

Used as such in formulations requiring its anti-odor properties as **neutralizing agent.**

Headquarters: Arkema France
420 rue d'Estienne d'Orves
92705 Colombes Cedex
France
T +33 (0)1 49 00 80 80

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hpp.arkema.com