

AlgaPūr™ High Stability High Oleic (HSHO) Algae Oil

A stable and luxurious liquid bio-based oil, created by the transformative powers of microalgae.

- Best-in-class sustainability and traceability profile
- Unprecedented oxidative stability and high sensory appeal
- Over 90% of beneficial Omega-9 Oleic acid in the form of trioleate ester

A Key Ingredient in Lubrizol's Nature-Based Portfolio

To better help you exceed your sustainability goals and customer expectations, we're continually enhancing our portfolio of nature-based alternatives. These top-performing, aesthetically-pleasing ingredients are made with the highest level of expertise, quality and eco-consciousness possible. Lubrizol is proud to include AlgaPūr™ High Stability High Oleic (HSHO) Algae Oil in our growing portfolio.

Features and Benefits:

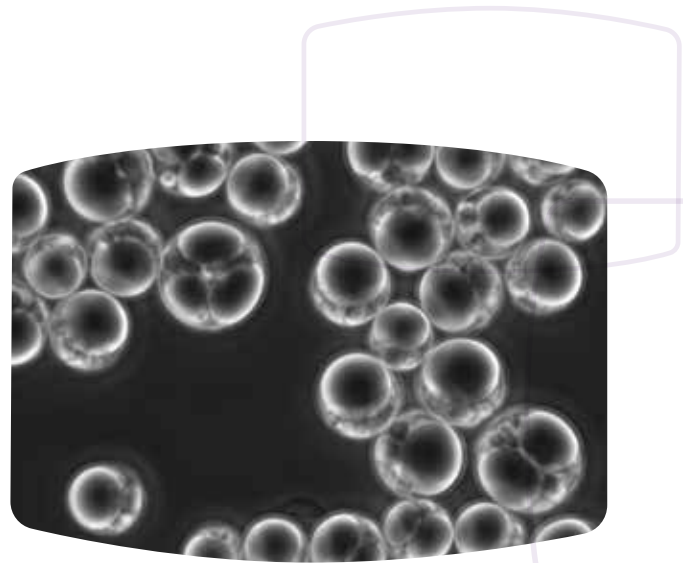
- Easy to emulsify
- Usage at high inclusion levels (up to 100%)
 - Silky (not greasy) after-feel
 - Negligible level of free fatty acid
 - Neutral odor and pale, yellow color

Description

AlgaPür™ High Stability High Oleic (HSHO) Algae Oil is one of the most stable liquid bio-based oils on the market, delivering versatility in eco-friendly formulations for skin and hair care. During a controlled manufacturing process, the algae efficiently convert simple sugars into triglyceride oils. This process takes place far from fragile ecosystems, resulting in minimal environmental impact while ensuring rapid scalability and reproducibility. AlgaPür™ High Stability High Oleic (HSHO) Algae Oil is a natural ingredient (according to ISO 16128), palm-free and fully traceable. It can be combined with or replace typical vegetable oils—and, in some instances, mineral oil.

Applications

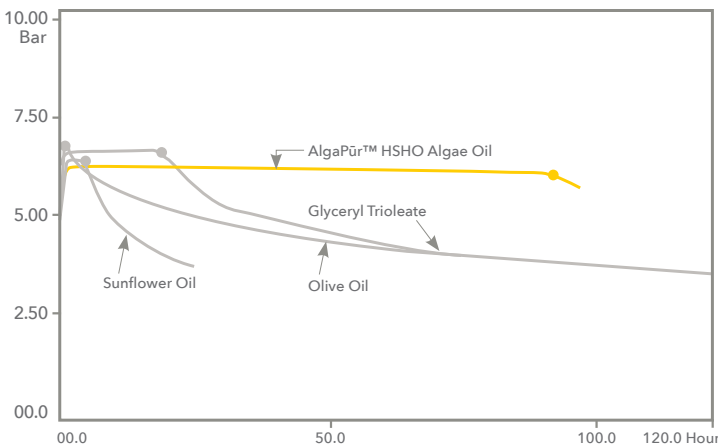
AlgaPür™ High Stability High Oleic (HSHO) Algae Oil performs well as an emollient or moisturizer in nourishing skin and hair care products, including body washes, shampoos, baby products, sun care, bath oils and lip care products.



Microalgae cells accumulating AlgaPür™ oil during fermentation.

Figure 1: Unprecedented Oxidative Stability

Oxidation Control Results



Oxidation Test:

The equipment is ML OXIPRES®. It is designed to monitor the oxidation of oil and fat heterogeneous products. It can also be used for samples of oil and fat. The measurement is based on the consumption of oxygen at elevated temperature and pressure. For safety, the block heater has a temperature cut-off acting at approximate 160°C (in our case, we measured at 100°C). Consumption of oxygen results in a pressure drop, which is measured by means of pressure transducers. The samples are heated to accelerate the process and shorten the analysis time.

Table 1: Excellent Solubility Profile with Most Oil Compounds

Esters	Caprylic Capric Triglycerides
	C12-15 Alkyl Benzoate
	Neopentyl Glycol Diethylhexanoate
	Diisobutyl Sebacate
	Isostearyl Isostearate
	Diisostearyl Dimer Dilinoleate
	Cocoyl Adipic Acid/Trimethylolpropane Copolymer
Vegetable Oils	Sunflower Oil
	Olive Oil
	Jobba Oil
	Soybean Oil
Non-Polar Oils	Mineral Oil
	Isohexadecane
	Petrolatum
Silicones	Cyclopentasiloxane
	Phenyl Trimethicone

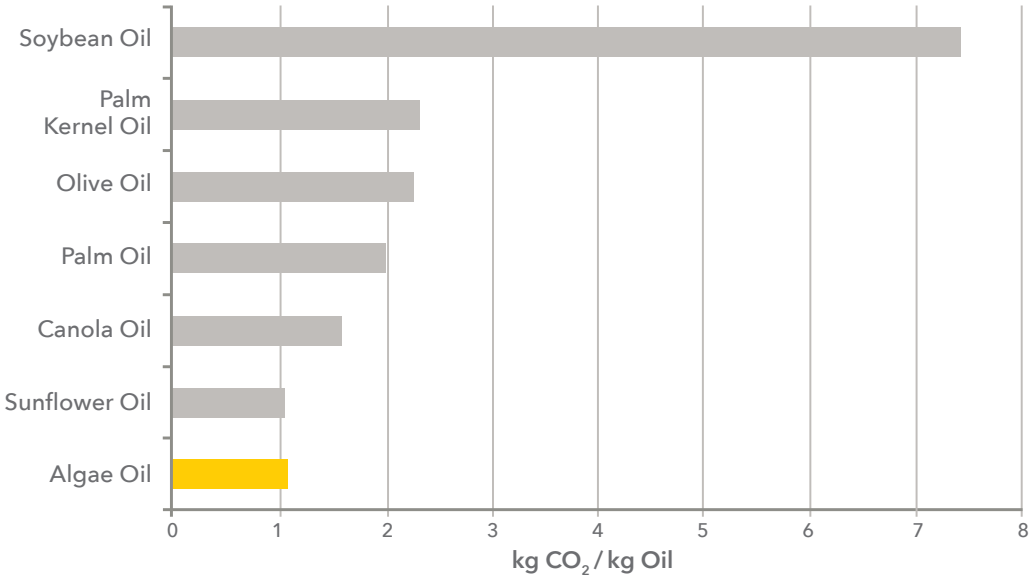


Sustainability Profile

The production takes place far from fragile ecosystems (in South Central Brazil) with low environmental impact.

Figure 2: A Low Carbon Footprint

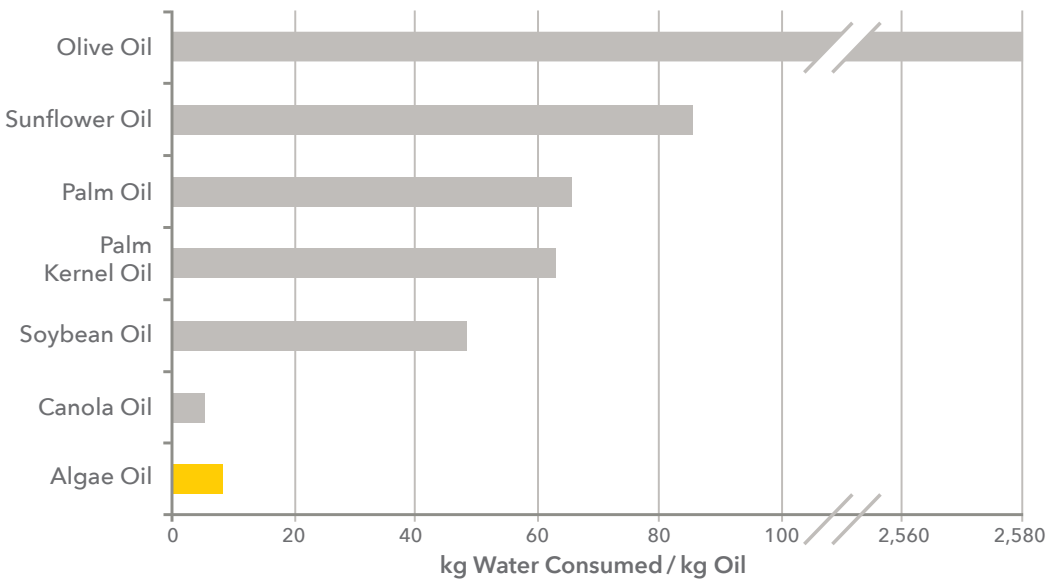
Algae oil produced in Brazil has a low-carbon footprint (includes carbon emissions associated with land use change).



Source: thinkstep (2016) Cradle-to-Gate Study of Competing Bio-Based Oils. Third Party Reviewed to ISO 1404/44 Standards. Includes land use change.

Figure 3: Limited Water Consumption

Algae oil production in Brazil consumes less water than production of nearly all other major commodity oils.



Source: thinkstep (2016) Cradle-to-Gate Study of Competing Bio-Based Oils. Third Party Reviewed to ISO 1404/44 Standards. Includes land use change.

AlgaPür™
 High Stability
 High Oleic
 (HSO)
 Algae Oil

The perfect blend of stability, versatility and sustainability.





*Lubrizol is globally collaborating with Corbion for AlgaPūr™ High Stability High Oleic Algae Oil in the beauty and personal care markets.

*AlgaPūr™ is a registered trademark of Corbion.



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