Natural Antioxidants for food or cosmetic oils and fats

The technology uses natural antioxidants and antibacterial agents e.g. to preserve food, bio-based cosmetics, and eco-friendly household products. Highly effective, non-toxic additives are used to create truly green, natural products with competitive product and storage properties. Cost-effective components allow for eco-friendly products with high customer acceptance. These products can also replace less preferred hydrophobic antioxidants and/or generate stable formulations (e.g. for deep frying or other high-temperature applications).

Natural ingredients with stronger stabilization than petrochemical benchmark antioxidants

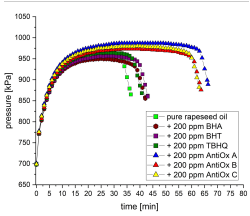
IP RIGHTS
PCT filed, EP and US pending
2019

The inventive antioxidants and antibacterial agents are applicable for a broad range of products. Thus, commercial opportunities for the green preservatives are e.g. food and cooking oils, cosmetic and pharmacologic oils and fats, oil-based lubricants, and household products.
These bio-based antioxidants are not carcinogenic, mutagenic and/or aquatoxic. They are overall very benign and often even edible as they are approved food additives.

01 Use of natural, highly effective and non-toxic active ingredients, normally insoluble in hydrophobic formulations

02 Active ingredients commercially available at very low cost

03 Active ingredients combined with solubilizers for hydrophobic formulations



Stabilization of oils with natural antioxidant mixtures and comparison with commercial antioxidants. Simulation of oil-aging according to the so-called "PetroOxy method".

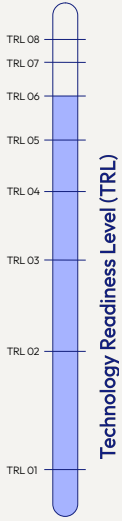
REFERENCES:
Kerkel, et al., 2021

CHALLENGE

Plant oils and animal fats are prone to oxidative degeneration affecting taste, performance, and storage capability of the respective products. In addition, water-containing formulations form an ideal breeding ground for bacteria. Especially for food and cosmetic applications, highly effective natural antioxidants that are soluble in hydrophobic formulations are highly sought after.

INNOVATION

Special bio-based solubilizers are used to dissolve hydrophilic antioxidants in oils. As a result, formulations are not limited to the usage of hydrophobic additives. This does not only enable the usage of a wider range of antioxidants, but also gives access to natural stabilizers that are distinctly more effective than hydrophobic ones. According to the polar paradox theory, hydrophilic antioxidants are especially effective in hydrophobic media and vice versa. Thus, it is possible to use natural, hydrophilic stabilizers that are several times more effective than common oil-soluble, petrochemical additives applied in industry.



01 Basic principles observed · **02** Technology concept formulated · **03** Experimental proof of concept · **04** Technology validated in lab · **05** Technology validated in relevant environment · **06** Technology demonstrated in relevant environment · **07** System prototype demonstrated in operational environment · **08** System complete and qualified

Bayerische Patentallianz GmbH
Dr. Linda Keil
lkeil@baypat.de
+49 (0)89 5480177-30
Prinzregentenstr. 52
80538 München