Solubilizers for Personal Care formulations

PCC Exol

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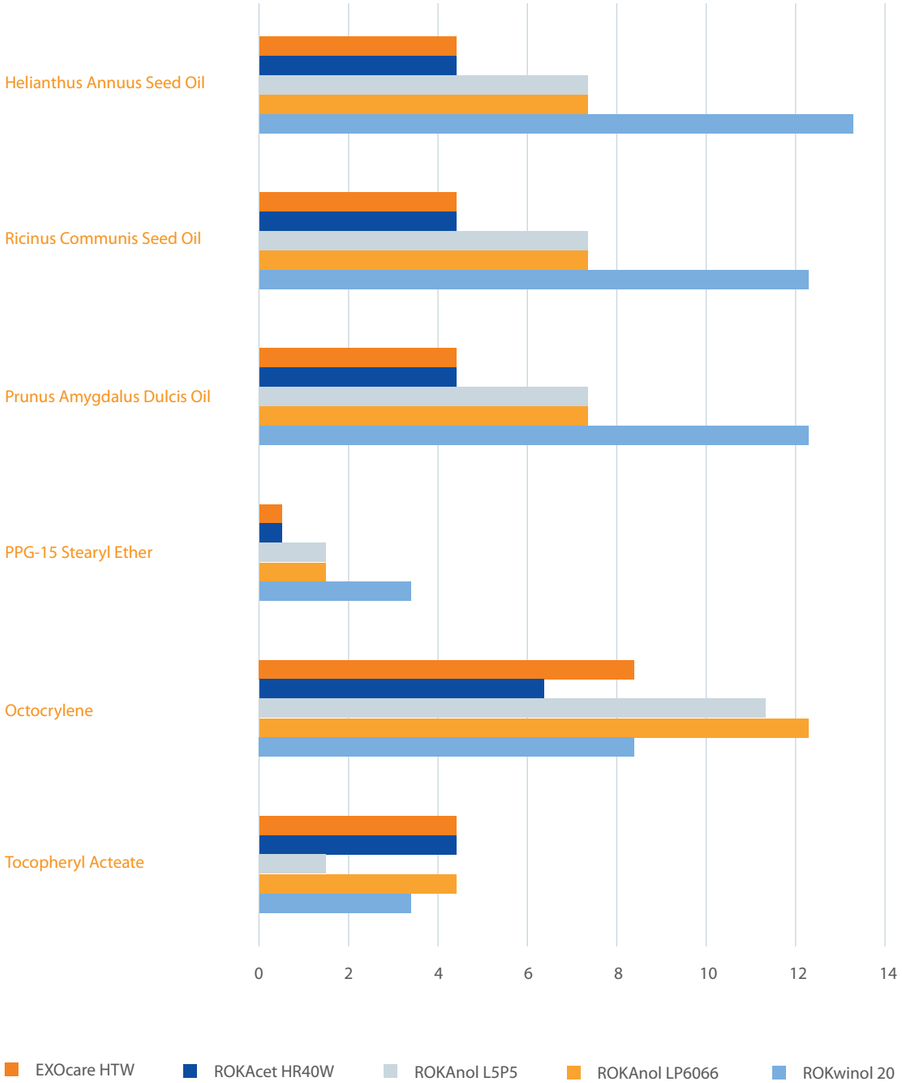
In the personal care industry, solubilizers help to blend very small amounts of oily substances – usually perfume, essential or fragrance oils – into aqueous formulations such as gels, toners, micellar waters and other haircare, skincare, shower and bath products. Solubilizers are usually more water soluble than oil-in-water (O/W) emulsifiers, but both function on the same principle and enable two immiscible ingredients to mix, usually oil and water. The main difference is the particle size of the dispersed phase. When solubilizer is used the particle size of the dispersed phase is so small that the final product appears transparent. When emulsifying agent is used, the particle size is much higher and the product appears milky.

Product Name	INCI	Appearance
EXOcare HTW	Trideceth-9 (and) PEG-40 Hydrogenated Castor Oil (and) Aqua	Clear liquid
ROKAcet HR40W	PEG-40 Hydrogenated Castor Oil	Liquid
ROKAnol L5P5	PPG-5-Laureth-5	Clear or slightly turbid liquid
ROKAnol LP6066	PPG-5-Ceteth-20	Clear or slightly turbid, oily liquid
ROKwinol 20	Polysorbate 20	Clear liquid

Applications

- shower and bath products
- haircare
- make-up and make-up removal
- hair coloring and bleaching
- aftershave and other alcoholic preparations
- sunscreen preparations
- perfumes, body fragrance mists
- liquids and gels for intimate hygiene
- lip protective preparations
- anti-acne preparations

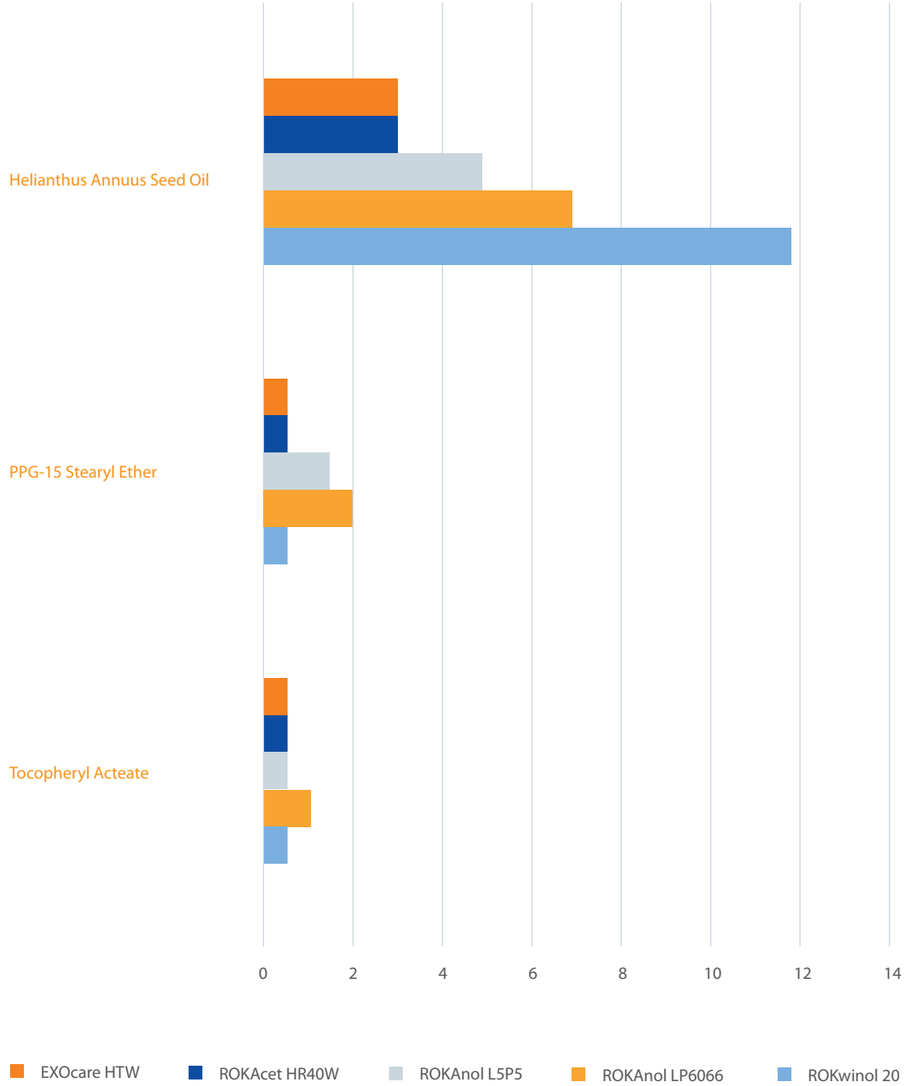
The amount of solubilizer needed to solubilize 0.5% of water-insoluble substance [wt%]



Solubilization test determining the amount of solubilizer needed to introduce 0.5% of water-insoluble components to obtain a clear mixture.

System: water – solubilizer - insoluble substance

The amount of solubilizer needed to solubilize 1% of water-insoluble substance [wt%]

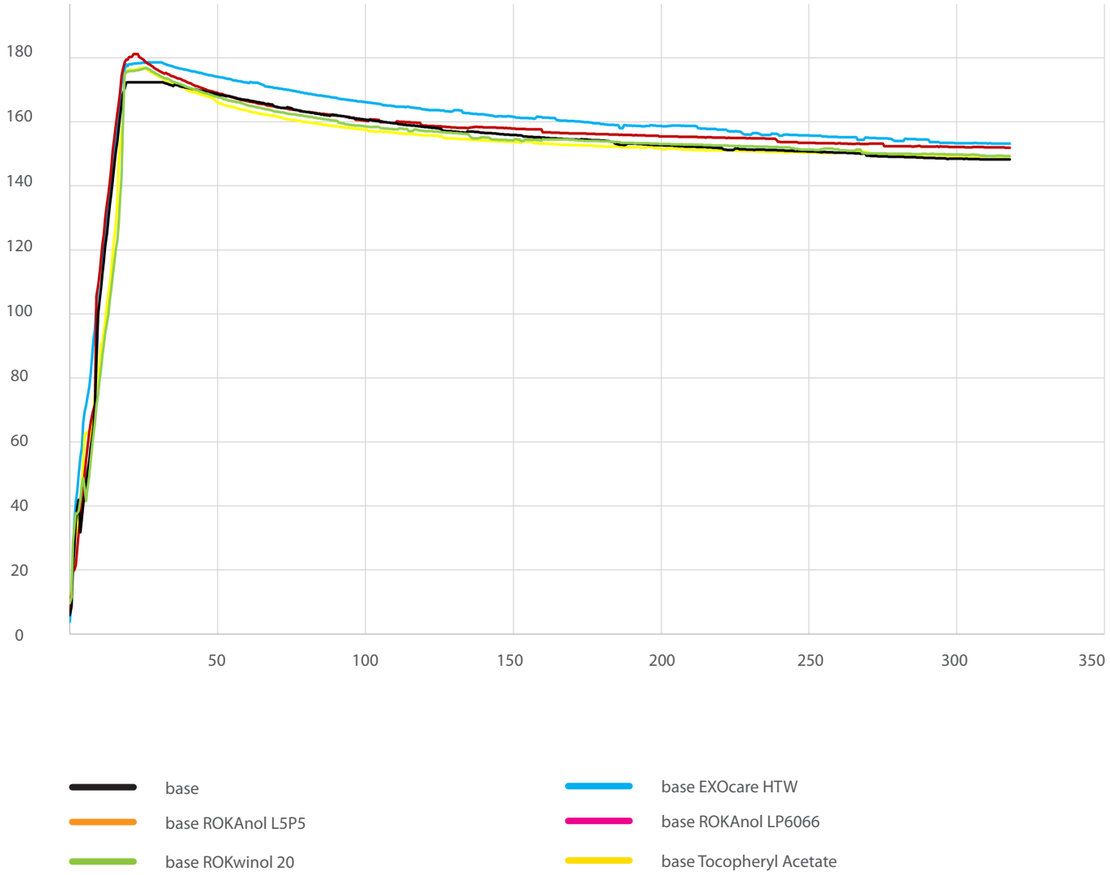


Solubilization test determining the amount of solubilizer needed to introduce 1% of water-insoluble component into formulation and obtain a clear mixture.

*System: water – surfactants – solubilizer -insoluble substance

*INCI: Sodium Laureth Sulfate (6.5%), Cocamidopropyl Betaine (2.0%), Sodium Chloride (2.0%), Lactic Acid (0.20%), pH 4,8

Foam height and stability [mm]



DFA100 KRÜSS foam analyzer Investigation of the foam formation and foam disappearance process for 1.0% of active substance (SA) of the formulation diluted in tap water at 20°C.

* SA was calculated from the following INCI composition: Sodium Laureth Sulfate (6.5%), Cocamidopropyl Betaine (2.0%), Sodium Chloride (2.0%), Lactic Acid (0.2%), pH 4.8

All tested solubilizers (EXOcare HTW, ROKAcet HR40W, ROKAnol L5P5, ROKAnol LP6066, ROKwinol 20) exhibit positive effect on the amount of created foam.

The characteristics of the foam disappearance are similar for all analyzed preparations.

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