Solubilizers for Personal Care formulations

Local. Global. Integrated.


Operating in 17 countries, in 39 different locations, PCC SE currently employs over 3 300 people.

About Us

PCC Exol SA is a major player in the European surfactants market. In the eastern and central-eastern part of the continent, it is the undisputed leader in its industry. Most of the production facilities and the company's headquarters are located in Brzeg Dolny, Poland. Here we develop, test and manufacture a wide range of anionic, non-ionic and amphoteric surfactants and speciality industrial formulations.

New products are continuously added to the portfolio in response to market trends and individual customer requirements. The surfactants produced at the plants have a very wide range of industrial applications. They are used as wetting agents, emulsifiers, auxiliaries in paper, metallurgy and many other industries, as well as in household chemicals, personal care products and textiles.

PCC EXOL pays special attention to the issue of sustainable development, which is one of the key elements of the company's strategy. In order to strengthen its competitive position in the surfactants market, the company is committed to promoting responsible production and consumption throughout the value chain. The concept of sustainable development is therefore a key aspect of all the company's management and operational processes.

PCC ROKITA SA
PCC PCG OXYALKYLATES IRPC

Polyols

- Polyether polyols
- Polyester polyols
- Prepolymers
- Polyurethane Systems

PCC ROKITA SA

Chlorine

- Chlorine
- MCAA
- Other Chlorine Downstream Product

PCC ROKITA SA

Phosphorus

- Phosphorus derivatives
- Naphthalene derivatives
- Polycarboxyethers (PCE)

PCC EXOL SA
PCC CHEMAX INC
PCC PCG OXYALKYLATES

Surfactants

- Anionic surfactants
- Cationic surfactants
- Nonionic surfactants
- Amphoteric surfactants (betaines)
- Chemical formulation

PCC SYNTEZA

Alkylphenols

- Nonylphenol
- Dodecylphenol
- Tristyrylphenol

PCC CONSUMER PRODUCTS SA

Consumer Products

- Household & industrial Cleaners, Detergents and Personal Care Products

PCC ROKITA SA

Energy

- Renewable Energy
- Conventional Energy

PCC INTERMODAL SA

Logistics

- Intermodal transport
- Road Haulage
- Rail Transport

PCC BAKKISILICON HF.

Silicon

- Microsillica
- Silicon Metal

PCC SE

Holding & Projects

- Portfolio Management
- Project Development

Solubilizers for Personal Care formulations

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

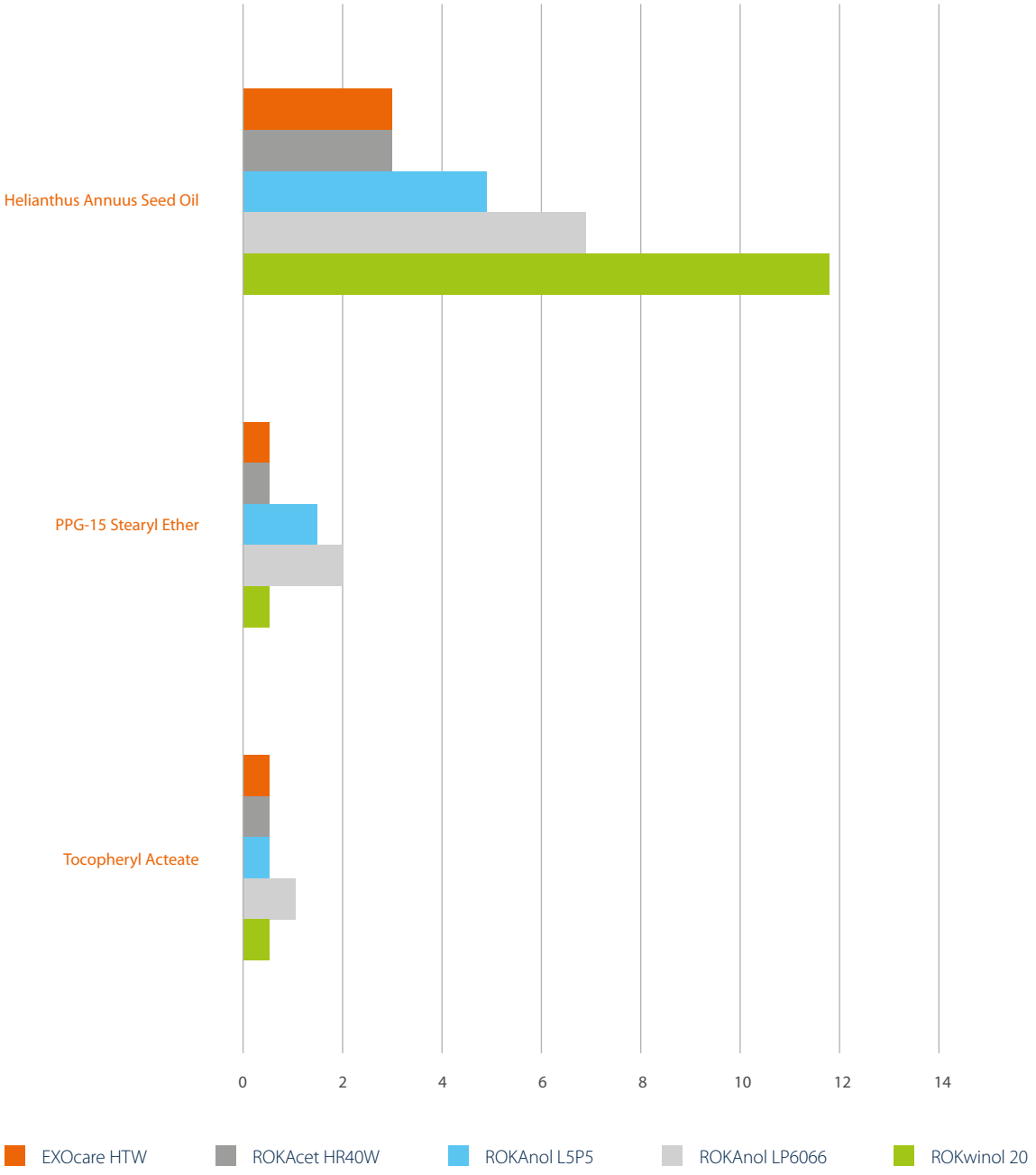
- Shower and bath products
- Haircare
- Make-up and make-up removal
- Hair coloring and bleaching
- Aftershave and other alcoholic preparations
- Sunscreen preparations
- Perfumes, body fragrance mists
- Liquids and gels for intimate hygiene
- Lip protective preparations
- Anti-acne preparations

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

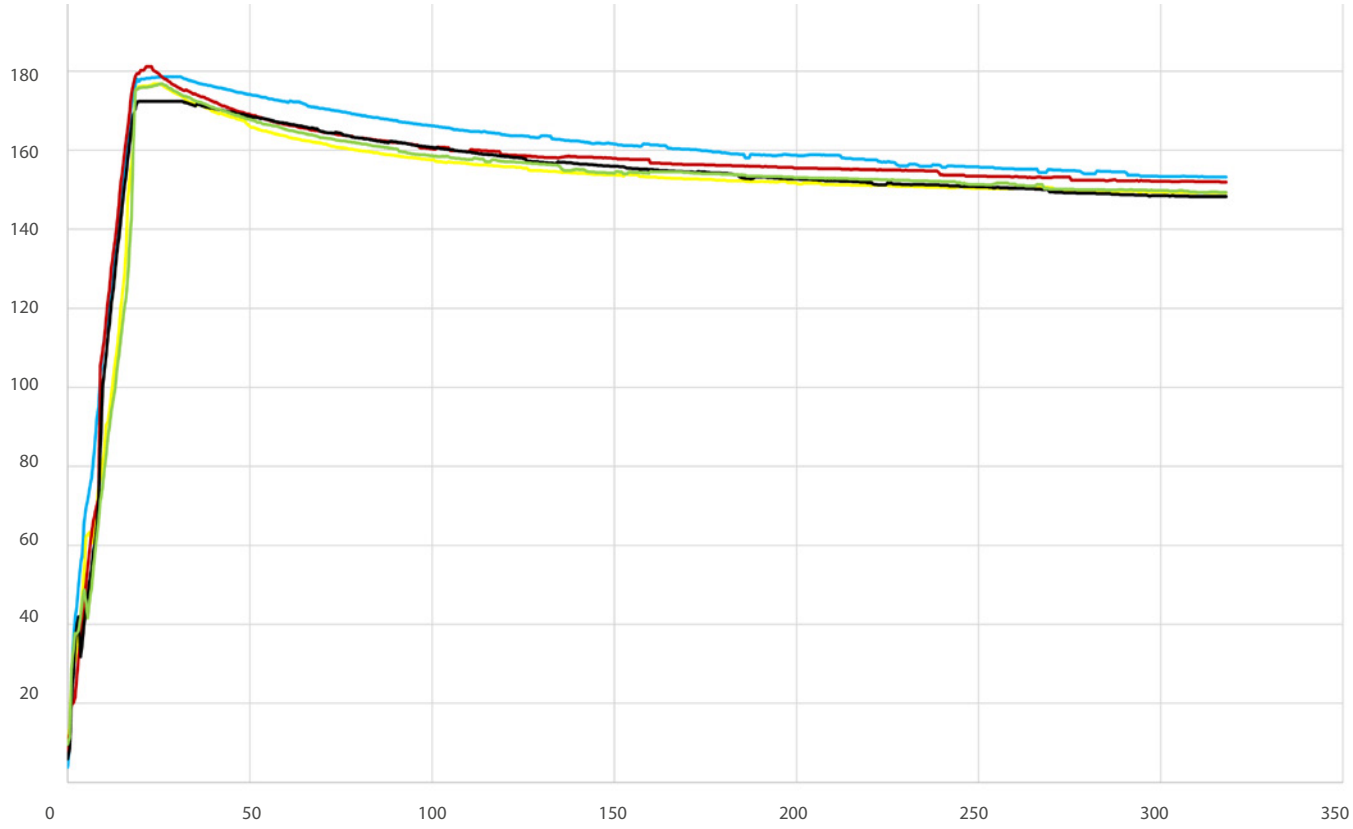
The amount of solubilizer needed to solubilize 1% of water-insoluble substance [wt%]



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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