

AEROSIL® R 974

A STABILIZER FOR PEG FREE W/O EMULSIONS

AEROSIL®



The fumed silica powder AEROSIL® R 974 offers an alternative technology to stabilize water/oil emulsions. Due to the special surface modification, there are both hydrophilic and hydrophobic groups on the surface of AEROSIL® R 974. This unique capability enables AEROSIL® R 974 to enrich at

the oil water interface and thereby stabilize water droplets in a continuous oil phase by the Pickering effect. Furthermore, AEROSIL® R 974 brings structure to the continuous oil phase, which limits the mobility of the water droplets, thereby providing even more emulsion stability.

PRODUCT INFORMATION

INCI NAME

Silica Dimethyl Silylate

APPEARANCE

Fine white powder

AEROSIL® R 974

SPECIFIC SURFACE AREA (BET, m²/g)

150 – 190

CARBON CONTENT (w.-%, BY IGNITION)

0.7 – 1.3

SENSORY EVALUATION

Panel studies were conducted comparing several guide formulations such as w/o face cream, w/o sunscreen and w/o make-up remover to related commercial products. These commercial products contained traditional emulsifiers. Here we listed some main evaluation results in each tested group. These sensory properties can be optimized by selecting different oils, silica wt % and the oil-to-water ratio.

FACE CREAM	SUNSCREEN	MAKE-UP REMOVER
Spreadability ++	Delayed dry-feel +	Spreadability ++
Stickiness ++	Stickiness +	Clean feel after using ++

++ better than tested commercial product

+ comparable with tested commercial product

PROCESSING HINTS

AEROSIL® R 974 can be processed in standard equipment used in emulsion production. AEROSIL® R 974 does not melt nor dissolve in either phase, therefore cold processing is possible. However, hot processing is also possible if required by other formulation ingredients as AEROSIL® R 974 is not sensitive to temperature.

The necessary concentration of AEROSIL® R 974 is in the range of 1.5-3.5 wt %. As AEROSIL® R 974 brings structure to the formulation, increasing the dosage will have a pronounced effect on the viscosity and rheological profile of the emulsion.

BENEFITS

PROCESSING

Easy to process:
Cold processable.
Standard equipment.

FUNCTION

Multifunctional:
Silica **both for rheology and stabilization**,
simplify the formulation.

FORMULATION

Little to **no limitation** in the selection of oils and actives.
Tunable oil/water ratio.
Small necessary concentration.
Can be used **alone or together** with organic emulsifier.

HIGHLIGHT

PEG free.

SENSORY

Fresh sensory. Less oily.

PRODUCT SAFETY

AEROSIL® R 974 is no hazardous material based on the available toxicological data and according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

AEROSIL® R 974 corresponds to the INCI (International Nomenclature Cosmetic Ingredient) name *Silica Dimethyl Silylate*. The use of AEROSIL® R 974 is not restricted in Europe (EC 1223/2009), the USA (PCPC - Monograph ID No. 6112) and China (IECIC 2015).



For further information, please turn to our website www.aerosil.com:
Guide Formulation (www.aerosil.com
> Services > Downloads > Personal care >
Guide formulations)



AEROSIL® R 974 product information
and safety data sheet:
(www.aerosil.com > Products > Hydro-
phobic fumed silica >
AEROSIL® R 974

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