

# AEROSIL® R 816

A STABILIZER FOR PEG AND SILICONE-FREE EMULSIONS

AEROSIL®



The fumed silica powder AEROSIL® R 816 offers an alternative technology to stabilize oil/water emulsions. Due to the special surface modification of the silica both hydrophilic and hydrophobic properties are introduced in just one material. This enables AEROSIL® R 816 to enrich at oil/water interfaces and thereby stabilize oil droplets in a continuous water phase by the Pickering effect. Furthermore, AEROSIL® R 816 brings structure to the continuous water phase and increases its viscosity which limits the mobility of the oil droplets, thereby providing for even more emulsion stability.

## AEROSIL® R 816 INFORMATION

<b>INCI NAME</b>	Silica Cetyl Silylate	<b>pH</b>	4.0 – 5.5
<b>APPEARANCE</b>	Fine white powder	<b>CARBON CONTENT (w.-%, BY IGNITION)</b>	0.9 – 1.8
<b>SPECIFIC SURFACE AREA (BET, m<sup>2</sup>/g)</b>	170 – 210	<b>TAMPED DENSITY (g/l)</b>	Appr. 60

## AEROSIL® R 816 BENEFITS

### THE CHOICE OF OILS IS YOURS

AEROSIL® R 816 stabilization works for a wide range of oils

### VARIABLE CONTENT OF OIL

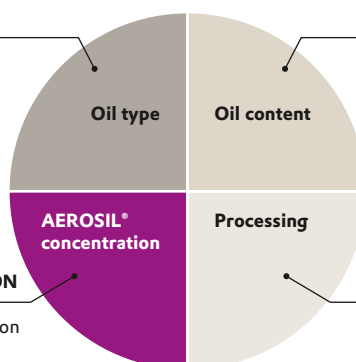
The oil percentage can be selected based on the formulation

### SMALL NECESSARY CONCENTRATION

Amount of AEROSIL® is similar to common emulsifier concentrations

### EASY TO PROCESS

- Cold processable
- Needs **standard equipment**



## PROCESSING HINTS

AEROSIL® R 816 can be processed in standard equipment used in emulsion production. As the material does not meet higher temperature to melt or dissolve cold processing is possible. However, AEROSIL® R 816 as an inorganic material is not temperature sensitive and can be processed at higher temperatures if this is required due to other formulation ingredients also.

The necessary concentration of AEROSIL® R 816 ranges from 1 to 4 w.-%. As AEROSIL® R 816 brings structure to the formulation increasing the dosage will lead to a pronounced effect on the viscosity and rheological properties of the emulsion.

## SENSORY EVALUATION

A panel study of over 30 participants across different regions underscores some important differences and similarities when formulating with our technology.

The data shows that our guide formulation has an excellent performance with respect to gloss, tackiness, immediate dry feel, and delayed dry feel. In addition, our technology performs even better when it comes to spreadability and proliferation. These sensory properties can be optimized by selecting different emollients, silica wt. % and the oil-to-water ratio.

## PRODUCT SAFETY

AEROSIL® R 816 is not a hazardous material based on the available toxicological data and according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and regional regulations (e.g., EU-CLP Ordinance). However, as any fine powder it can generate nuisance dust if not handled correctly. AEROSIL® R 816 is neither a colorant, UV absorber nor preservative and is not restricted for the use in cosmetic products according to the EU Cosmetic Regulation (EC 1223/2009).



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AEROSIL® R 816 product information and safety data sheet  
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**Evonik Resource Efficiency GmbH**  
Business Line Silica  
Rodenbacher Chaussee 4  
63457 Hanau-Wolfgang  
Germany

Phone: +49 6181 59-8118  
Fax: +49 6181 59-78118  
ask-si@evonik.com  
[www.evonik.com](http://www.evonik.com)