



Tinosorb[®] S Aqua

New UV Filter Technology
for the Water Phase

SunCare

 **BASF**
The Chemical Company

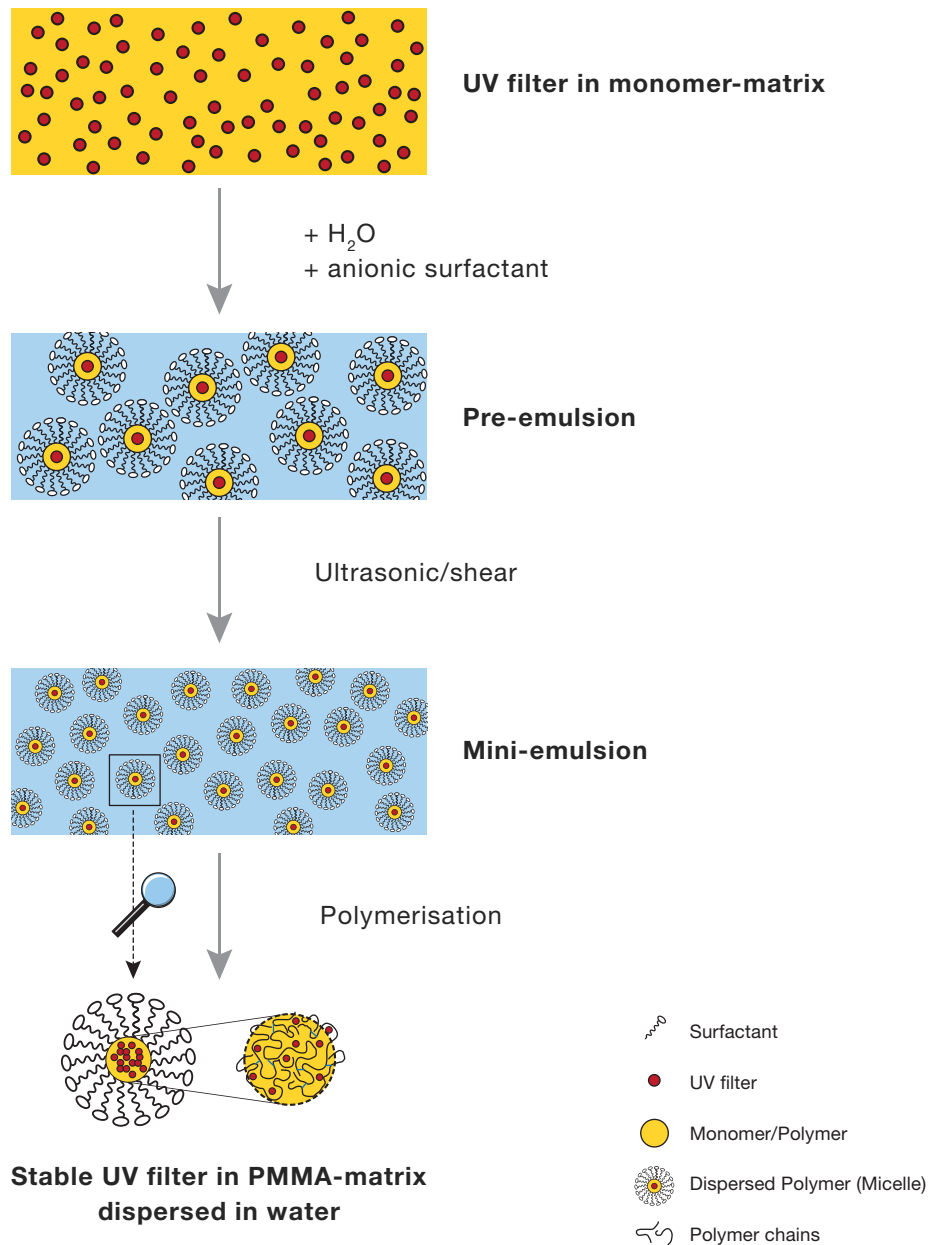
BASF is introducing a New UV Technology for the Water Phase

With the launch of Tinosorb® S Aqua, BASF is introducing an innovative technology for bringing oil-soluble UV filters into the water phase.

Stable aqueous UV filter dispersions are obtained with a unique technology (mini-emulsion polymerization).

The final product is a polymer dispersion containing 20% UV filter e.g. Tinosorb® S (BEMT)* and 19% Polymer (PMMA)** – The UV filter is dissolved in the polymer matrix which is dispersed in water.

Mini-emulsion polymerisation



* BEMT: Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine

** PMMA: Polymethylmethacrylat

Challenges in SunCare Formulations

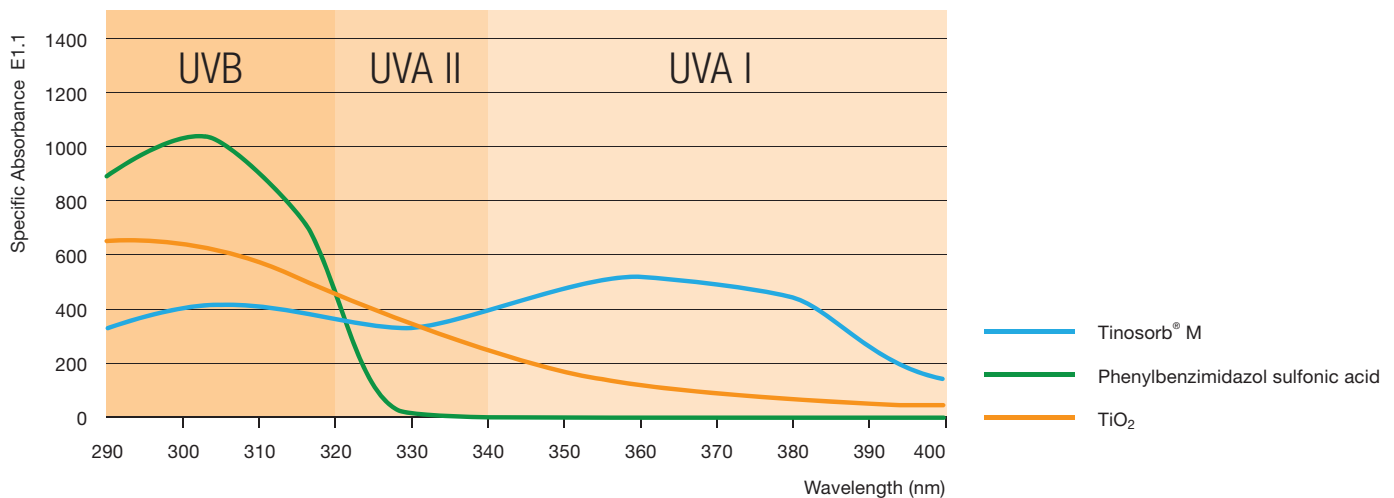
Today's sun care formulations become increasingly more complex. Consumer awareness of the need for sun protection is rising, resulting in an increased demand for high performance products with excellent sensory properties.

Most UV filters are either oils or need to be dissolved in polar emollients. The results are highly loaded oil phases, which lead to the most common limitations in SunCare formulations:

- reduced cosmetic elegance
- lower flexibility to modify the sensory properties of formulations
- suboptimal performance due to the use of filters mainly in one formulation phase (oil phase)

A solution is the incorporation of UV filters into the water phase.

CURRENT CHOICE OF UV FILTERS FOR THE WATER PHASE



Currently there are just a few UV filters for the water phase on the market. Known limitations can be for example:

- predominance of UVB versus UVA absorption
- negative influence on water resistance
- whitening effects on skin
- negative impact of salts on formulation viscosity

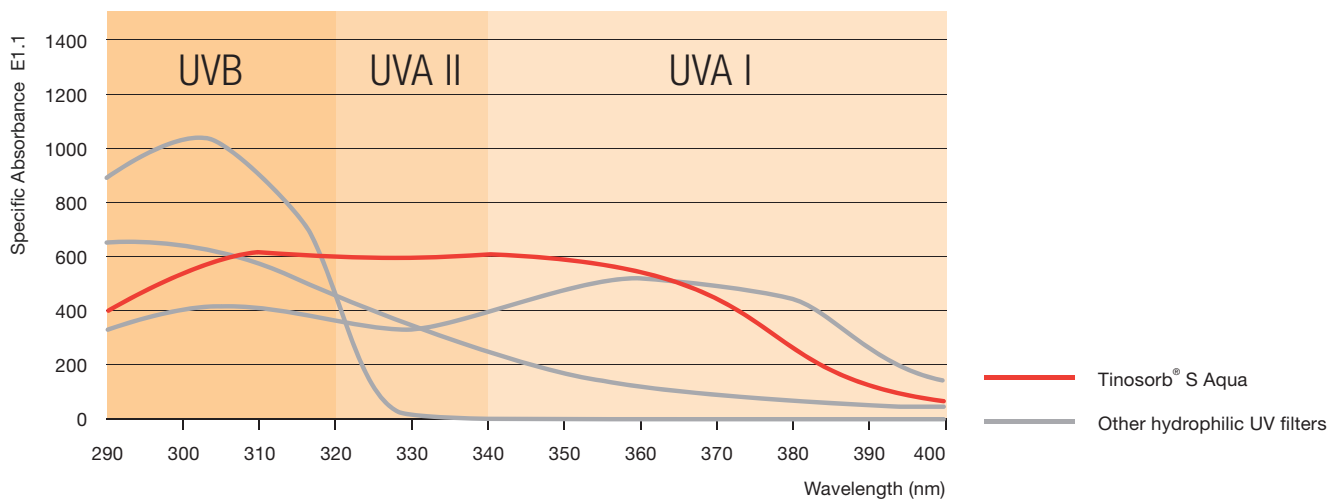
Thus, the current choice of available hydrophilic UV filters still limits the flexibility of formulators.



Tinosorb® S Aqua – the New UV Filter for the Water Phase

Tinosorb® S Aqua offers for the water phase the same high performance broad-spectrum UV filter technology known from the original Tinosorb® S.

TINOSORB® S AQUA



The use of Tinosorb® S Aqua allows a balanced incorporation of UV filters in the water and oil phase. Therefore, a more homogeneous distribution of the UV filters on skin can be achieved which often result in a boosting effect.

Through incorporation into the water phase, Tinosorb® S Aqua offers increased formulation flexibility. Lower UV filter concentration is needed in the oil phase to achieve highest contribution to SPF and UVA-PF.

There is no negative influence on water resistance and no whitening effect.



Benefits of Tinosorb® S Aqua

Traditional benefits of Tinosorb® S – The Original:

- most efficient oil soluble broad-spectrum UV filter
- excellent photo-stability for long lasting protection
- highest contribution to SPF and UVA-PF already at low concentration
- outstanding stabilizer for photo-unstable UV filters
- good compatibility with all cosmetic ingredients
- good solubility in polar cosmetic oils
- excellent tox profile

Main additional benefits of Tinosorb® S Aqua:

- filter for the water phase
- unloading of the oil phase
- improved filter distribution
- increased formulation flexibility

	Tinosorb® S	Tinosorb® S Aqua
INCI	Bis-Ethylhexyloxyphenol Methoxyphenyl Triazine	
Characteristics	Photostable, broad-spectrum, compatible with all other UV filters, stabilization effect, minimal skin penetration	
Physical state	Powder	Dispersion
Incorporation	Oil soluble	Dispersible in water
Performance	High broad-spectrum absorbance	



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Personal Care Ingredients

BASF offers one of the most comprehensive ingredients portfolio in the personal care industry. It is designed to meet the customers' needs in the HairCare, SunCare, SkinCare, ColorCare, BodyCare and OralCare markets. The high quality product range includes e. g. polymers, UV filters, effect pigments, actives, hair dyes and surfactants. BASF constantly strives to anticipate the requirements of the personal care market and creates innovative products for the sustainable development of the industry.

Safety

We know of no ill effects that could have resulted from using our products for the purpose for which they are intended and from processing them in accordance with current practice. According to the experience we have gained up to now and other information at our disposal, our products do not exert any harmful effects on health, provided that they are used properly, due attention is given to the precautions necessary for handling chemicals, and the information and advice given in our safety data sheet are observed.

Labeling

Details about the classification and labeling of our products and further advice on safe handling are contained in the current safety data sheets.

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