

Technical
Specification



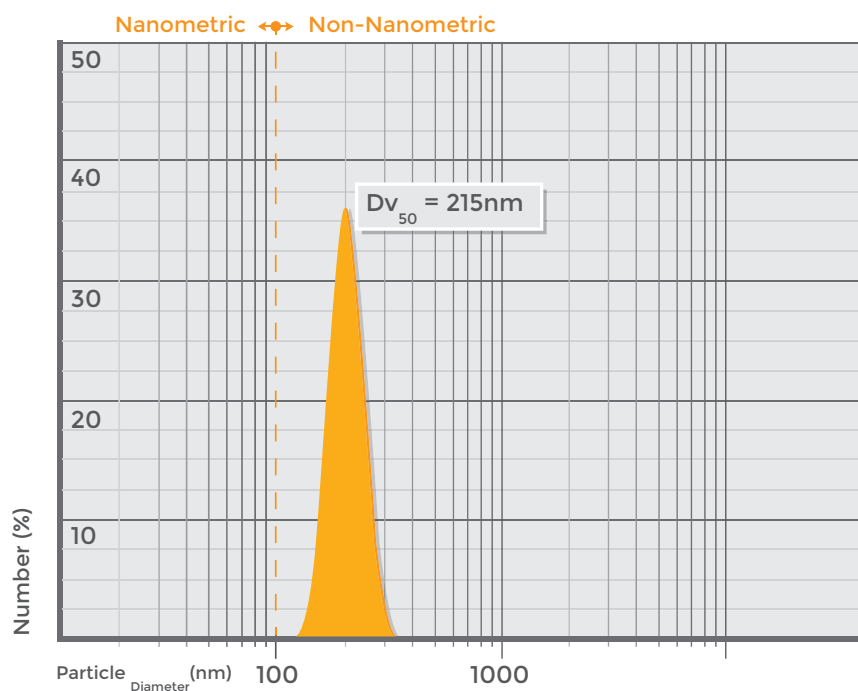
enhanceU-T-medium

ENHANCEU-T-MEDIUM, A NON-NANOMETRIC INORGANIC SUNSCREEN WITH COLOR

ADParticles has developed EnhanceU-T-medium, an inorganic composite with properties suitable for use as UV filter with color in cosmetic. The particle-size distribution of EnhanceU-T-medium is not in the nanometer range (1-100nm) and it provides a high level of UVA and UVB protection.

EnhanceU-T-medium consists of a composite of TiO₂, SiO₂ and mineral pigments developed by ADParticles patented technology, providing broad band UV protection and offering safety, efficacy and color to the final formula.

The particle size distribution was determined by Nanoparticle Tracking Analysis (NTA) a characterization technique that utilizes the properties of both light scattering and Brownian motion in order to obtain the particle number size distribution of samples.



COMPOSITION

INCI:

- Titanium Dioxide
- Silica
- CI-77491
- CI-77492
- CI-77499

TiO ₂ content	84-87 %
FeO/Fe ₂ O ₃ /FeO.OH (CI-77491,CI-77492,CI-77499) content	10 %
SiO ₂ content	3-6 %
As (ppm)	≤ 3
Sb (ppm)	≤ 20
Pb (ppm)	≤ 10
Hg (ppm)	≤ 1

UV ABSORPTION SPECTRUM. PHOTOSTABILITY

- SPF: 9
- UVA PF: 6
- UVAPF/SPF Ratio : 0,6
- UVA/UVB Ratio: 0,7
- Critical wavelength: 386 nm

The analysis was performed with a **Sun simulator Solar Oriel 300W** with a Xenon lamp (Newport, Cleveland, USA).

The filter concentration in the final formula was **5% (w/w)**.

- Melt the ingredients of the fatty **Phase 1** and heat to 80-85°C until completely solubilized.
- Heat **Phase 2** and add EnhanceU-T-medium. Heat to 80-85°C while stirring.
- Add **Phase 1** into **Phase 2** while stirring.
- Cool to **50°C** while stirring, add Benzyl Alcohol and complete cooling.

Ingredients	Ingredients (%wt)
EnhanceU-T-medium	5.0
Phase 1	
Lanoline	4.8
Cocoa Butter	2.1
Glyceryl Stearate	3.2
Stearic Acid	2.1
Phase 2	
Water	75.9
Sorbitol	5.3
Triethanolamine	1.1
Phase 3	
Benzyl Alcohol	0.5



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