

Technical Data Sheet of G-Block DTB 400 CCT

Product Description

Fine and stable dispersion of UV grade, **broad spectrum** titanium dioxide powder in cosmetic oils at 65% by weight of active. It is engineered to speed up the entire product development process to market, from global regulatory compliance, to formulation development and SPF testing, and to large-scale manufacturing. It can be incorporated easily with the conventional equipment into any personal care products to provide the broad-spectrum sun protection benefit.

Global Compliance

- ✓ Comply with global regulations. The UV filter - TiO₂ powder meet with the regulations:
 - ✓ FDA of United States: Broad-spectrum, USP grade, and Audit.
 - ✓ European Union Regulation. EC No. 2019/1857, Annex VI to EC No. 1223/2009.
 - ✓

INCI Titanium Dioxide (and) Caprylic/capric Triglyceride (and) Alumina (and) Polyhydroxystearic Acid (and) Isostearic Acid (and) Polyglycerl-3 polyricinoleate (and) Lecithin (and) Stearic Acid

- ✓ CAS # 13463-67-7/(65381-09-1;73398-61-5)/1344-28-1/27924-99-8/30399-84-9/29894-35-7/8002-43-5/57-11-4
- ✓ EINECS 236-675-5/(265-724-3; 277-452-2)/215-691-6/exempt/250-178-0/exempt/232-307-2/200-313-4

General Product Specification

<u>Item</u>	<u>Specification</u>
Appearance	Off-white soft cream
Odor	Characteristic Smell
Viscosity, 50 rpm, SP #7	10,000 – 120,000 cP
% TiO ₂	~ 65%

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Last product specification update: 10/5/2021, Last document update: 10/5/2021

Safety data:

- Repeated Insult Patch Test (RIPT) with 50 human subjects shows no skin irritation and no skin sensitization.
- The titanium dioxide powder before the coating of a thin alumina layer (for further protection of skin against radicals) and dispersion meets with USP standard. The powder is designed and manufactured for strong broad Spectrum UV protection.
- Total heavy metal < 20 ppm, and Arsenic < 2 ppm
- Microbiology data: Total aerobic bacteria count and the total yeast/mold count < 100 cfu/g, free of Pathogens: E.Coli, P. Aeruginosa, and S. Aureus.

Features/Benefits

- Stable, pourable, and high performance liquid dispersion with 65% UV & USP Grade TiO₂ UV filters.
 - Critical wavelength (CW) = 378 nm, UVAPF/ SPF ≥ 1/3, PA +++
 - SPF = 3 * 1% TiO₂ active.
- Comply with global regulations including broad-spectrum and UVA requirements. **One formulation for all global markets.**
- Fast speed to market from formulation development, through SPF testing and manufacturing.
 - Extremely high % active for flexible formulation development with good sensory.
 - Provide “**G-Block Prediction Calculator**” to calculate the appropriate % dosage for the target SPF and CW for quick formulation development.
 - Manufacturing with common equipment of cosmetic beauty products. No need to re-mix.

Applications

Cosmetic and Toiletry:

- Natural sunscreens that meet with all global regulations for broad spectrum and “natural” standards.
- Sunscreens for baby and people with sensitive skin.
- Sport sunscreens with long lasting UV A and B protection.

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- Daily skin care lotion and cream with UV A and B protection.
- Natural Color cosmetics with sunscreen benefit.
- Sun protection products of high SPF with a synergistic combination of organic UVA/UVB filters and G-Block DTB 400 CCT.

How to use it?

- Just add into the oil phase of the formulation and mix.
- Dosage: About 3 SPF per 1% TiO₂ active; Critical Wavelength 378 nm. For example, SPF 30 sunscreen would need: $30/3 = 10\%$ TiO₂ active or 16.7% G-Block DTB 300 CCT ($16.7\% \times 60\% = 10\%$ TiO₂ active).
- For predicting the SPF and critical wavelength of sunscreen prototypes made of the blends of several G-Block products, please contact us for the "**G-Block Prediction Calculator**" program to do it easily.
- **Sunscreen Test Protocols:**
 - SPF: In-Vivo Protocols of FDA of USA and EN ISO 24444:2010.
 - UVA: In-Vivo protocol of EN ISO 24442:2011; In-Vitro Protocol of FDA of USA (critical wave) ; EN ISO 2443:2012 (UVAPF) .
 - Please note that in-vitro SPF measurement is not suitable for sunscreens of inorganic UV filters

Packaging

25 kg in 5 gallon plastic pail

Storage

- Store the product in its original package and avoid storing at extreme high and low temperature.

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