

Technical Data Sheet of Applecare PDS 300

Product Description

Applecare PDS 300 is an easy-to-use **all-natural** pigment dispersion system for dispersing the cosmetic inorganic pigment powder and fillers into the oil phase of cosmetic formulation, resulting in a low viscosity, fine, uniform, and high dosage pigment dispersion without the need of pre-surface coating/treatment of the pigments. It is a unique complex, consisted of optimized amount of wetting agents, dispersants, and light cosmetic oils, to perform three critical functions of pigment grinding – wetting, separation of pigment agglomerates, and stabilization of the separated pigment particles.

Legislation

- INCI Polyhydroxystearic acid (and) Caprylic/Capric Triglyceride (and) Isostearic Acid (and) Lecithin (and) Polyglyceryl-3 Polyricinoleate
- CAS # 27924998/(65381091;73398615)/30399849/8002435/29894357
- EINECS exempt/ (2657243; 2774522)/2501780/2323072/exempt
- **COSMOS approved**

General Product Specification

<u>Item</u>	<u>Specification</u>
Appearance	Light brown liquid
Odor	Mild characteristic odor
Dry residue (3 g, 3hrs, 110C)	➤ 95%
Viscosity (cP), 20 rpm, 25C	200 – 1000 cP

Toxicity Data

- **Repeated Insult Patch Tests (RIPT):** Test on 50 subjects showed that it is a non-primary irritant and non-primary sensitizer to skin in human subjects.

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- **Applecare PDS 300** is non-GMO, free of gluten, phthalate, pesticide, paraben, and chemicals in the California Proposition 65 listing.

Features/Benefits

- An all natural liquid, very easy to use in the color formulation development and in the manufacturing of the color products, **especially for natural color cosmetics.**
- Compatible with the oil blends containing up to 70% of Cyclopentasiloxane oil.
- Applecare PDS 300 can disperse the hydrophilic (non-surface treated) inorganic pigments (TiO₂, ZnO, Iron oxide, etc) and fillers in the cosmetic oil into a low viscosity and high pigment load (up to 75% by weight) dispersion with common pigment dispersing equipments such as Cowles disperser, homogenizer, or propeller, etc. Additionally, it also changes their surfaces to become hydrophobic, improving their water-resistance and longer-lasting benefits. This unique combination of dispersing and surface-treating benefits make Applecare PDS 300 an essential ingredient in developing the new color control air cushion compact, which is a multi-tasking silky light CC foundation with broad spectrum SPF 50+, complete coverage, anti-aging and deep skin hydration in an easy-to-use sponge package.
- Since it disperses and surface-treats the less expensive non-surface treated pigments at the same time to match up with the performances of the surface-treated pigments, it practically eliminates the need for the expensive surface-treated pigments. Applecare PDS 300 also works well for the surface-treated pigments, whose coating is not perfect.

Applications

Cosmetic and Toiletry:

- Beauty Products: foundation, mascara, lip products, pencils/liners, eye shadow, blush, etc.
 - Color control air cushion compact - a low viscosity W/S-O foundation in a sponge package.
 - **Natural beauty products.**
- Compressed or baked powder compact: Use as a liquid binder or part of liquid binders
- Sunscreen products with inorganic UV filters.

How to use it?

- Typical dosage is 5% by weight of the non-surface treated pigments, and is 2-3% for the surface-treated pigments.
- Processing to make a 70 – 75% pigment dispersion stock: 1). Mix the oil ingredients and the Applecare PDS 300 in a vessel at room temperature or preferable at > 65° C. 2) Add the pigment blend in 3 separate

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portions – 50%, 30%, and 20%, and mix each portion well at > 65° C until homogeneous before the addition of the next portion. And 3) if desired grind the dispersion further with ball mill or 3-roll mill to a finer dispersion.

- In-situ processing: 1) Mix a portion of the liquid oil components and Applecare PDS 300 together, so that the final pigment % is 40 % – 50%. Do not add the emulsifiers at this step. 2) Grind the pigments into the oil blend with homogenizer to a fine homogeneous dispersion, preferably at > 65° C. 3) you may incorporate the emulsifiers now and move to the next step in the O/W or W/O emulsion preparation.

Packaging

- Product is available in 16 Kg /5 gallon pail

Storage

Store the product in its original package, sealed tightly, and protect it from exposure to the extreme low temperature. If Applecare PDS 300 became a solid from the low temperature, simply heat it to 30C to bring it back to a liquid state. When it is stored over a long period of time, cloudiness may appear at the bottom. Light to moderate mix

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