

Technical Data Sheet of Applecare A-100

Product Description

Applecare A-100 is an easy-to-use 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) Lecithin (and) 2-Ethylhexyl Palmitate (and) Isopropyl Myristate (and) Isostearic Acid (and) Polyglyceryl-3 Polyricinoleate
- CAS # 27924-99-8/8002-43-5/29806-73-3/110-27-0/30399-84-9/29894-35-7
- EINECS exempt/232-307-2/249-862-1/ 203-751-4/250-178-0/ exempt

General Product Specification

<u>Item</u>	<u>Specification</u>
Appearance	Light to dark brown liquid
Odor	Mild characteristic odor
Dry residue (3 g, 3hrs, 105C, Mechanical Convection Oven)	>93%
Viscosity (cP), 20 rpm, 25C	300 – 1100 cP
Heavy Metal ¹	Arsenic ≤ 2 ppm Lead ≤ 10 ppm Mercury ≤ 1 ppm Antimony ≤ 5 ppm Cadmium ≤ 5 ppm

----- Create Possibilities -----

Last product specification update: Version 4, 7/5/2022. Last document update: 7/5/2022.

Total Microbial (cfu/g) ²	< 100 cfu/g
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1. Although heavy metal is not done on every lot, the manufacturer tests one out of every 5 batches to ensure compliance.
2. Since this is an anhydrous product, only a periodic check on the total bacterial count is needed to assure quality. This test is not conducted on every lot.

Toxicity Data

- **Repeated Insult Patch Tests (RIPT):** The test results on 55 subjects: The product was “Dermatologist-tested” and was not associated with skin irritation or allergic contact dermatitis in human subjects.
- **Applecare A-100** is non-GMO, free of gluten, phthalate, pesticide, parabens, and chemicals in the California Proposition 65 listing.

Features/Benefits

- A low viscosity liquid, very easy to use in the color formulation development and in the manufacturing of the color products.
- Applecare A-100 can not only 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, but also change their surfaces to hydrophobic, improving their water-resistance and longer-lasting benefits. This unique combination of dispersing and surface-treating benefits make Applecare A-100 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 A-100 also works well for the surface-treated pigments, whose coating is not perfect.

Applications

Cosmetic and Toiletry:

----- **Create Possibilities** -----

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- 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.
- 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 A-100 in a vessel at room temperature or preferable at > 65° C. 2) Add the pigment blend in 3 portions – 50%, 30%, and 20%, and mix 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 A-100 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 A-100 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, a cloudy layer may appear at the bottom. Light to moderate mixing or stirring will disperse it back into the bulk liquid.

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