



# APPLECARE PDS-300™

COSMOS-APPROVED PIGMENT DISPERSING AGENT



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# APPLECARE PDS-300

## FEATURES AND BENEFITS

Applecare PDS-300 is a COSMOS-approved dispersing system for hydrophilic color pigments, allowing formulators to disperse these pigments into oil at very high-loading concentrations.



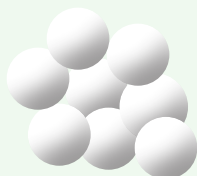
40% TiO<sub>2</sub>  
60% CCT  
White Paste Dispersion



75% TiO<sub>2</sub>  
2.25% Applecare PDS-300  
22.75% CCT  
Easy Flow  
Liquid Dispersion

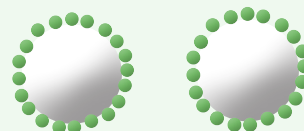
Applecare PDS-300 is engineered to adsorb very quickly to the pigment surface, creating a hydrophobic barrier around the pigment and preventing re-aggregation through steric stabilization.

### Uncoated Color Pigments



Uncoated pigments agglomerate together, increasing viscosity while having a negative impact on homogeneity and sensory.

### Uncoated Color Pigments treated with Applecare PDS-300

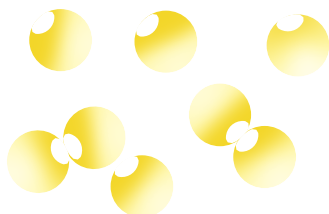


Only a small amount of Applecare PDS-300 is required to prevent pigments from re-agglomerating.

- Reduces average particle size, which creates a much finer, more homogenous dispersion
- Lower viscosity by greatly reducing inter-particle attraction through steric hindrance

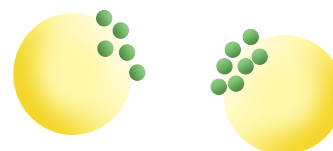
Applecare PDS-300 can even boost the dispersing power of pre-treated pigment particles.

### Surface Treated TiO<sub>2</sub> Pigments



Surface treatments help reduce agglomeration, but most surface treatments extend to around 70-80% of the pigment surface, leaving the uncoated areas free to re-agglomerate.

### Coated TiO<sub>2</sub> Pigments treated with Applecare PDS-300



Applecare PDS-300 will bond to the uncoated portions of surface-treated pigments, greatly enhancing the effectiveness of the coating.

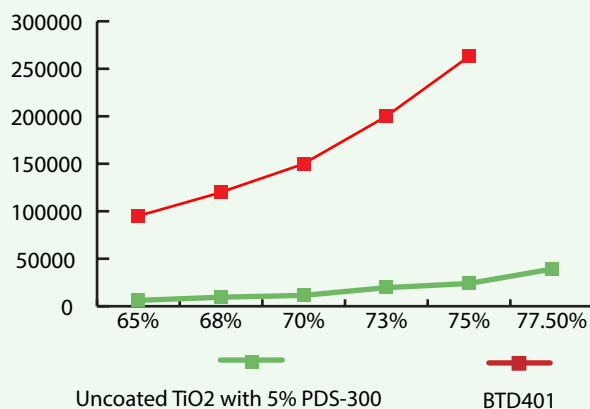
## Control Viscosity in Natural Color Cosmetic Formulations

Is your natural foundation too thick?  
Suffering from clumpy mascara?

Applecare PDS-300 gives rheology control back to formulators, allowing them to reduce viscosity to their desired level by simply adjusting the amount of PDS-300 usage.

Fig. 1 displays the viscosity reducing power of Applecare PDS-300 at high pigment concentrations, even outperforming synthetic ITT surface treatments (BTD-401)!

Fig. 1: Viscosity Reduction Comparison Between Synthetic Coating and Applecare PDS-300



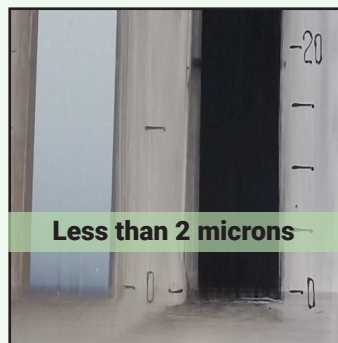
## Going Green Without Compromising Functionality

Applecare PDS-300 can create high quality fine dispersions by smoothing out the average particle size as low as 2 microns.

This translates into the following benefits:

- Brighter Color Strength
- Increased Coverage
- Better Transparency and Opacity
- Boost Mattifying Properties
- Increased SPF Values in UV-grade Inorganic Pigments
- Smoother Sensorial Profile

Fig. 2: Hegman Gauge Test Inorganic Dispersion



70-75% White Rutile TiO<sub>2</sub>  
3-8% Applecare PDS-300  
Wax 2-5%  
Oil to 100%

60-70% Iron Oxide  
3-8% Applecare PDS-300  
Oil to 100%

Fig. 3: Hegman Gauge Test Organic Dispersion



55-60% YELLOW 5 AL Lake  
3-8% Applecare PDS-300  
Oil to 100%

45-55% RED DC 7 Lake  
3-8% Applecare PDS-300  
Oil to 100%

# ADDITIONAL FEATURES AND BENEFITS

## Tremendous Versatility

- Compatible with organic, inorganic, and mineral pigments
- Compatible with both natural and non-natural oils - hydrocarbons, esters, it even works with silicone oils below certain thresholds!

## Green Chemistry Friendly

- Replace petroleum-sourced synthetic coatings with Applecare PDS-300-treated uncoated pigments to make your products far more eco-friendly. Reduces both carbon footprint (no chemical waste byproducts!) and formulation costs.
- Alternatively, you can significantly increase pre-treated pigment performance with PDS-300.
- Shorten overall processing time and lower energy costs.

## Formulation Tips

- Recommended Dosage: 3 – 8% of pigment weight
- Grinding temperature should be above 60C for better bonding of Applecare PDS-300 to pigment surface
- Do not include emulsifiers or polar additives in the oil phase while forming dispersion
- Do not add in the water phase before completing the pigment dispersion into the oil phase

## Applications

- Foundation, Lipstick, Lip Gloss, Blush, Congealer, Pencils, Eye Shadow, Mascara
- Air Cushion-type Formulations
- Compact Powders - as a liquid binder or part of liquid binders
- Sun Care Products with inorganic UV filters

