## Applechem Formulary - Sunscreens



## Sugary Satin Oil-Free Daily Wear Foundation SPF 28, Broad Spectrum (CC-F 0020)

This PEG-Free, oil-free daily wear foundation features fantastic sheer-thinning sensory while providing a stable, easy-to-process chassis for your pigment or favorite hero ingredients.

**Applemol PTIS Plus** is a wetting + dispersant emollient optimized for turnkey formulation freedom. It greatly simplifies the pigment dispersion process, allowing color cosmetic formulators the freedom to change viscosity, pigment load, texture, and shine without traditional formulation limitations.

**G-BlockDZ 370 CCT** is the industry standard for Zinc Oxide SPF dispersions. Its unmatched stability and transparency on the skin allows for more true and even shades of foundation, even for darker skin tones. The high active load (70%) creates the opportunity to reach higher SPFs at lower usage levels.

**SENSOGEL NOVUS** is a very powerful polyol thickener which is used to great effect in this formula. Not only does it boost the viscosity of polylols like glycerin from a soft liquid into a structured gel, but also tamps down on the traditional stickiness associated with these types of ingredients. Sensogel NOVUS works synergistically with polyols in traditional applications to elevate sensory and boost stability of the final formula.

## Specifications

- SPF: 28; FDA Protocol, 1 subject
- Viscosity @ 10 rpm: 25,000-30,000 cP
- 🍎 рН: 7.5
- 50°C oven: 1 month stable
- 🍎 🛛 Freeze-Thaw: Passed 3 Cycles

PHASE	INCI NAME (TRADE NAME)	USAGE (WT%)
A	Distilled Water	42.0
	Erythritol	2.00
	Sorbitol	2.00
	Preservative	0.50
В	Titanium Dioxide	7.39
	Yellow Iron Oxide	1.50
	Red Iron Oxide	0.26
	Black Iron Oxide	0.15
	Applemol PTIS Plus	6.20
C	G-Block DZ 370 CCT	20.0
	Applecare PDS 300	2.50
	Isohexadecane	12.00
D	Polyglyceryl-10 Mono/Dioleate (Caprol PGE 860)	0.70
	Glyceryl Behenate (Compritol 888 CG)	0.50
	Sensogel Novus	2.30

## **Processing Method**

- 1. Mix Phase A with a propeller mixer for 5 minutes at room temperature until erythritol and sorbital are fully dissolved.
- 2. Mix and heat Phase B in a separate vessel at 1000-1500 RPM for 30 minutes with a disperion blade at 70 Celsius.
- 3. Grind Phase B on a 3-roller mill (2 passes, 7:3 and 3:1).
- 4. On a dispersion blade, add Phase C into Phase B until homogenous at 70 Celsius.
- 5. Mix and heat Phase BC in seperate vessel at 500 rpm for 15-20 minutes with a dispersion blade at 70 Celsius.
- 6. Add Phase D into Phase BC until homogenous at 70 Celsius.
- 7. Then move Phase BCD to Silverson homogenizer. Add Phase A into Phase BCD when homogenizing at 4000-4500 rpm for 5 minutes without continous heating.
- 8. Switch to propeller mixing while cooling down to room temperature. Add back water that may have evaporated during processing.
- 9. Adjust pH to 7.0-7.6 if needed.

reate Possibilities

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