



## *Extra Protection Super Silky Sunscreen Lotion with Intelimer<sup>®</sup> 8600 Polymer*

### *Formulating Guide U002*

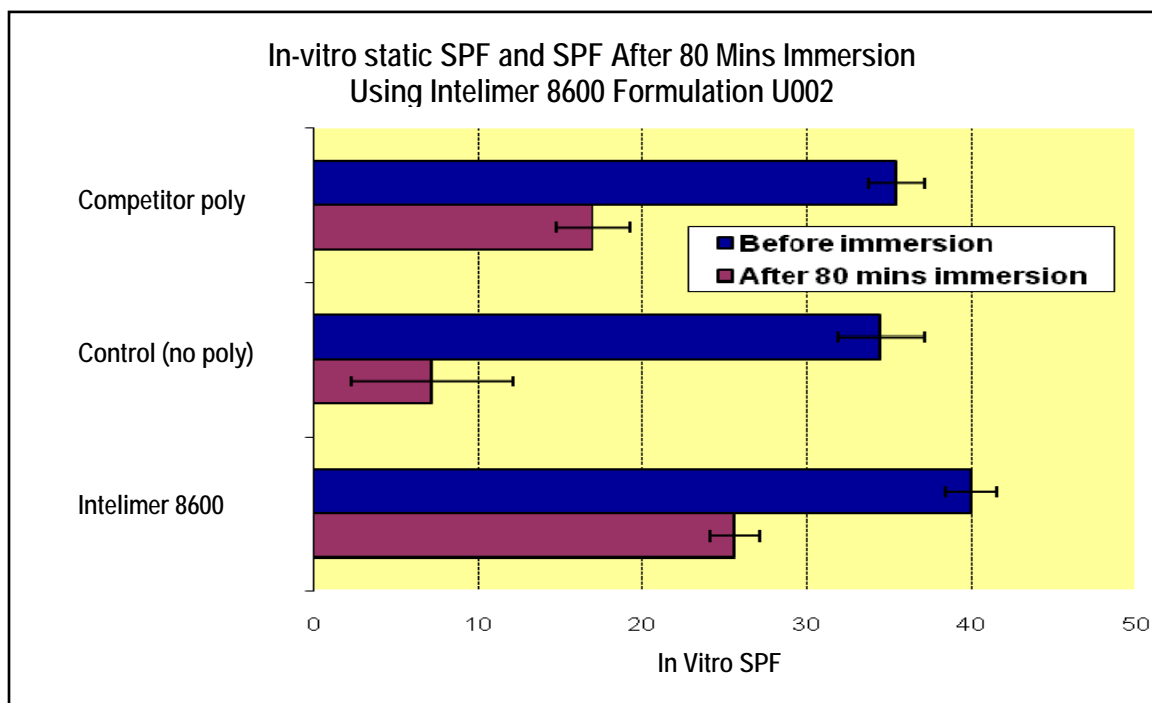
#### Description

Extra Protection Super Silky Sunscreen Lotion with Intelimer 8600 polymer is designed to be a luxurious sun screen lotion that provides excellent wash off resistance along with wonderful sensory properties. The unique benefits of Intelimer 8600 in this formulation is that it improves wash off resistance and enhances SPF.

#### Typical Properties

(not to be used as specifications)

Appearance	White cream
pH	6.6
Stability	Passed 4 month 50 °C
Viscosity (cPs) (Spindle C @ 10 rpm)	41,000–50,000



SPF testing was conducted by IMS Inc. All samples were tested using the IMS Inc In-Vitro Waterproof Protocol. In-Vitro SPF measurements made both prior to, and after the samples have been immersed in a controlled temperature water bath at 40 °C while agitated at 300 rpm for 80 minutes. Please note that these conditions are slightly more aggressive than typical in-vivo waterproof test conditions.

Ingredient/Trade Name	INCI Designation	%W/W	Function	Supplier
<b>Phase A</b>				
Isopropyl Myristate	Isopropyl Myristate	2.5	Emollient	
Finsolv® TN	C12-15 Alkyl Benzoate	3.0	Solublizer	Innospec
Mineral Oil USP	Mineral Oil	3.5	Emollient	
T-Lite® SF	Titanium dioxide (and) Aluminum Hydroxide (and) Dimethicone Methicone copolymer	1.2	Sun Screen Active	BASF
Uvinul MC® 80	Octinoxate	7.5	Sunscreen Active	BASF
Uvinul M® 40	Oxybenzone	5.25	Sunscreen Active	BASF
Neo Heliopan® OS	Octisalate	4.75	Sunscreen Active	Symrise
Priesterene® 4911	Stearic Acid	1.8	Stabilizer	Croda
Crodacol® S-95	Stearyl Alcohol	2.2	Stabilizer	Croda
Stepan GMS® Pure	Glyceryl Stearate	2.0	Emulsifier	Stepan
Amphisol® K	Potassium Cetyl Phosphate	1.0	Emulsifier	DSM
<b>Phase B</b>				
Deionized Water	Deionized Water	57.6		
Keltrol® CG-T	Xanthan Gum	0.2	Thickener	CP Kelco
Veegum® K	Magnesium Aluminum Silicate	0.2		
Intelimer® 8600 (49.13% solids)	Poly C8-22 Alkyl Acrylate/ Metacrylic Acid Cross Polymer	2.0	Film Former and SPF Enhancer	Air Products
Crotein® C	Hydrolyzed Collagen	0.15	Active	Croda
Germaben® II	Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben	1.0	Preservative	ISP
<b>Phase C</b>				
Ceraphyl® SLK	Isodecyl Neopentanoate	1.0	Emollient	ISP
Alpha Tocopherol	Vitamin E	0.5	Antioxidant	BASF
6800181	Aloe Extract in Cyclomethicone	1.0	Active	Bell Flavour & Fragrance
<b>Phase D</b>				
D Panthenol	Panthenol	0.5	Skin Protectant	BASF
Natural Alpha Bisabolol	Alpha Bisabolol	0.10	Active	
Dow Corning® 193	PEG-12 Dimethicone	1.0	Emollient	Dow Corning

## Procedure

1. Combine all Phase A ingredients into a vessel while stirring mixture.
2. In another vessel add deionized water then slowly add xanthan gum while stirring. Continue to stir until clear homogenous mixture forms.
3. Add other remaining Phase B ingredients one by one to gum mixture while continuing to stir.
4. Begin heating both vessels until the temperature of both vessels is between 80-85 °C. Once a 80-85 °C temperature has been achieved add Phase A to Phase B slowly while continuing to stir the mixture.
5. Remove from heat and homogenize the resulting emulsion for three minutes.
6. Once the homogenized emulsion has cooled to 35°C add Phase C ingredients one by one while continuing to stir.
7. Once the above mixture has cooled to room temperature add Phase D ingredients one by one while continuing to stir.
8. Adjust the pH with Triethanolamine (TEA 99%) and package.

## For Samples or More Information

If you would like additional information or technical assistance in preparing specific formulations, write or call Air Products.

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Pub. No. 165-08-008-GLB-Sep08

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