



Sunscreen Lotion with Zinc Oxide and Intelimer[®] 8600 Polymer Formulating Guide U004

Description

Sunscreen Lotion with Zinc Oxide and Intelimer 8600 polymer is designed to be a high SPF sun screen lotion that provides excellent wash off resistance and sensory properties. The unique benefit of Intelimer 8600 in this formulation is that it improves wash off resistance and enhances SPF.

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 and PemulinTR-2 while stirring. Continue to stir until clear homogenous phase.
3. Add other remaining Phase B ingredients one by one to water phase 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.
5. Remove from heat and homogenize the resulting emulsion for three minutes.
6. Adjust pH as necessary with Citric Acid 10% solution.

Typical Properties

(not to be used as specifications)

Appearance	White cream
pH	6.8
Stability	Passed 4 month 50 °C
Viscosity (cPs) (Spindle D @ 10 rpm)	20,000–50,000

Ingredient	INCI designation	% w/w	Function	Supplier
Phase A				
Cetiol [®] LC	Coco Caprylate (and) Coco Caprate	5.0	Emollient	Cognis
Uviniul [®] MC80	Octinoxate	7.5	Sunscreen Active	BASF
Uvinul [®] M40	Oxybenzone	6.0	Sunscreen Active	BASF
Neo Heliopan OS	Octasalicylate	5.0	Sunscreen Active	BASF
Dow Corning [®] 246	Dodecamethyl Cyclohexasiloxane	1.2	Emollient	Dow Corning
Crodacol [®] 1618	Ctearyl Alcohol	4.5	Stabilizing Agent	Croda
Incropol [®] CS-20	Ceteareth-20	0.5	Emulsifier	Croda
Zinclear -IM 50AB	Zinc Oxide	15.0	Sunscreen Active	Dow Chemical
Dow Corning [®] 200/50cst	Dimethicone	4.2	Emollient	Dow Corning
Amphisol [®] K	Potassium Cetyl Phosphate	2.0	Emulsifier	DSM
Phase B				
Deionized Water	Deionized Water	43.6	Diluent	
Keltrol [®] CG-T	Xanthan Gum	0.25	Thickener	CP Kelco
Pemulin [®] TR-2	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0.25	Emulsifier	Lubrizol
Intelimer 8600 (1% solids)	Poly C8-22 Alkyl Acrylate/ Metacrylic Acid Cross Polymer	2.0	Film Former and SPF Enhancer	Air Products
Pricerine [®] 9088	Glycerine 99.5%	2.0	Humectant	Uniquema
Citric Acid anhydrous	10% solution	1.1	pH Adjuster	

For Samples or More Information

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

Air Products and Chemicals, Inc.

7201 Hamilton Boulevard

Allentown, PA 18195-1501 U.S.A.

Telephone: 800-345-3148

(Outside the U.S. and Canada 610-481-6799)

Fax: 610-481-4381

<http://www.airproducts.com>

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