

**Micro-TiO<sub>2</sub> Sunscreen Cream No. 513**

		Wt.%
<b>A</b>	<b>VEEGUM<sup>®</sup> Ultra</b> Magnesium Aluminum Silicate	2.0
	Carbomer (Ultrez <sup>™</sup> 10 <sup>1</sup> )	0.2
	Water	52.5
<b>B</b>	Polysorbate 20 (Tween <sup>®</sup> 20 <sup>2</sup> )	1.0
	Aqua (and) Titanium Dioxide (and) Alumina (and) Silica (and) Sodium Polyacrylate (and) Propylene Glycol (and) Diazolidinyl Urea (and) Methyl Paraben (and) Propyl Paraben (Tioveil <sup>®</sup> AQ-G <sup>2</sup> )	25.0
	Butylene Glycol	3.0
<b>C</b>	Cetyl Alcohol	0.5
	Isosorbide Laurate	1.0
	Caprylic/Capric Triglyceride (Neobee <sup>®</sup> M-5 <sup>3</sup> )	5.0
	Glyceryl Monostearate SE	3.0
	C12-15 Octanoate (Finester <sup>™</sup> EH-25 <sup>4</sup> )	3.0
	Dimethicone (XIAMETER <sup>®</sup> PMX-200 Silicone Fluid 350 cs <sup>5</sup> )	1.0
	Laureth-23 (Brij <sup>®</sup> L23 <sup>2</sup> )	0.5
	Steareth-2 (Brij <sup>®</sup> S2 <sup>2</sup> )	1.1
Steareth-21 (Brij <sup>®</sup> S721 <sup>2</sup> )	1.1	
<b>D</b>	Etidronic Acid	0.1
<b>E</b>	Triethanolamine (to pH 6.0±0.5)	q.s.
	Preservative, Fragrance	q.s.

**Procedure:** Begin heating the water phase to 80°C. Slowly add the **VEEGUM<sup>®</sup> Ultra** and carbomer sequentially or as a dry blend to the water agitated at maximum available shear. Mix until fully hydrated. Add the water phase ingredients from Part B, mixing until uniform. Maintain the water phase at 80°C. Blend the oil phase ingredients of Part C and heat to 80°C. Add the oil phase to the water phase with high shear mixing. Mix at reduced speed while cooling to 45°C; then add Part D followed by Part E. Adjust as necessary to pH 6.0±0.5.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Lubrizol Advanced Materials Inc., Cleveland, OH

<sup>2</sup>Croda Inc., Edison, NJ

<sup>3</sup>Stepan Company, Northfield, IL

<sup>4</sup>Innospec Active Chemicals, Edison, NJ

<sup>5</sup>Dow Corning Corporation, Midland, MI

**TRADEMARKS**
**VEEGUM** is a registered trademark of Vanderbilt Minerals, LLC.

Brij and Tween are registered trademarks of Uniqema Americas LLC.

Finester is a trademark of Innospec Performance Chemicals Company.

Neobee is a registered trademark of Stepan Company.

Tioveil is a registered trademark of Acma Limited Corporation.

Ultrez is a trademark of Noveon IP Holdings.

Xiameter is a registered trademark of Dow Corning Corporation.

Rev04/25/2013