





## Smectite Clays for Natural and Organic Personal Care Products

Vanderbilt Minerals offers several natural smectite clay products for use as emulsion stabilizers, suspension stabilizers and rheology modifiers for topical personal care compositions. These clays are particularly suitable for products labeled as "Natural", "Organic" or "Containing Organic Ingredients".

**VANATURAL**<sup>®</sup> Bentonite Clay, **VANATURAL XGB** and **VEEGUM**<sup>®</sup> Pure Magnesium Aluminum Silicate are authorized by ECOCERT Greenlife as complying with the ECOCERT and COSMOS standards for ecological and organic cosmetics.

**VANATURAL** Rapidly hydrating, water-washed bentonite clay - a pure and natural suspension stabilizer, emulsion optimizer and rheology modifier for all topical products. It is particularly suited for creams, lotions, suspensions and other personal care products marketed as organic or natural. This is the ECOCERT and COSMOS listed version of **VANATURAL MC**.  
INCI name: Bentonite

**VANATURAL XGB** A tailored synergistic blend of high purity natural bentonite and xanthan gum that hydrates quickly, even with low shear mixing in unheated water. It imparts a pleasant application feel while reliably stabilizing water based suspensions and emulsions over a broad range of pH and storage temperatures. **VANATURAL XGB** is especially recommended for difficult to stabilize suspensions and emulsions.  
INCI name: Bentonite (and) Xanthan Gum

**VEEGUM Pure** ECOCERT and COSMOS listed version of **VEEGUM R**, the most widely used magnesium aluminum silicate clay for stabilizing topical emulsions and suspensions. **VEEGUM Pure** is USP/NF Magnesium Aluminum Silicate Type IA. INCI name: Magnesium Aluminum Silicate

### USING VANATURAL AND VEEGUM CLAYS

**VANATURAL** and **VEEGUM** clay products must be properly hydrated in water to provide their best performance. No other materials should be present in the water, because they can interfere with proper clay hydration and colloidal structure formation. The degree of clay hydration is directly proportional to the amount of energy used to disperse the product. The degree of hydration therefore increases as mixing time, mixing intensity or water temperature increase. In emulsion products, the time required for adequate hydration of **VANATURAL** and **VEEGUM** clay products can be mostly or wholly accommodated by hydrating the clay as the water is heated to the emulsification temperature. **VANATURAL XGB** is a fast-hydrating product, requiring relatively little energy input; adequate hydration can be achieved quickly in heated or unheated water and with low or high shear mixing.

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**Soothing Organic Skin Lotion with Calendula Extract No. 595**

		<b>Wt. %</b>
<b>A</b>	<b>VANATURAL</b> <sup>®</sup> Bentonite Clay	2.5
	<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.5
	Water	71.0
<b>B</b>	Cetearyl Wheat Straw Glycosides (and) Cetearyl Alcohol (Xyliance <sup>™</sup> <sup>1</sup> )	5.0
	Butyrospermum Parkii (Shea) Butter (Shea Butter-Ultra Refined <sup>™</sup> Certified Organic <sup>2</sup> )	3.5
	Theobroma Cacao (Cocoa) Seed Butter (Cocoa Butter-Ultra Natural <sup>™</sup> Certified Organic <sup>2</sup> )	3.5
	Persea Gratissima (Avocado) Oil (Avocado Oil Certified Organic <sup>2</sup> )	6.0
	Simmondsia Chinensis (Jojoba) Seed Oil (Jojoba Oil-Natural Golden-Certified Organic <sup>2</sup> )	3.0
<b>C</b>	Glycerin (and) Water (and) Calendula Officinalis Flower Extract (Certified Organic Calendula Extract <sup>3</sup> )	5.0
	Preservative	q.s.

**Procedure:** While heating the water to 75°C, slowly add the **VANATURAL**<sup>®</sup> and **VANZAN**<sup>®</sup> NF (sequentially or as a dry blend) while mixing at maximum available shear. Mix until fully hydrated. Maintain the water phase temperature at 75°C. Combine Part B ingredients and heat to 75°C. Add Part B oil phase to Part A water phase and mix thoroughly. Cool with mixing; add Part C ingredients when the emulsion is <30°C and mix thoroughly.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Actives International, Allendale, NJ

<sup>2</sup>BioChemica Int'l, Inc., Melbourne, FL

<sup>3</sup>Bio-Botanica, Inc., Hauppauge, NY

**TRADEMARKS**
**VANATURAL** and **VANZAN** are registered trademarks of Vanderbilt Minerals, LLC.

Ultra Natural and Ultra Refined are trademarks of BioChemica International, Inc.

Xyliance is a trademark of Soliance.

Rev01/31/2013

**Organic Skin Lotion No. 594**

		<b>Wt. %</b>
<b>A</b>	<b>VANATURAL</b> <sup>®</sup> Bentonite Clay	2.5
	<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.5
	Water	56.0
<b>B</b>	Aloe Vera Gel, from Aloe Vera Whole Leaf Powder Organic Spray Dried 100X <sup>1</sup> (1% powder/99% water)	20.0
<b>C</b>	Cetearyl Wheat Straw Glycosides (and) Cetearyl Alcohol (Xyliance <sup>™2</sup> )	5.0
	Butyrospermum Parkii (Shea) Butter (Shea Butter-Ultra Refined <sup>™</sup> Certified Organic <sup>3</sup> )	3.5
	Theobroma Cacao (Cocoa) Seed Butter (Cocoa Butter-Ultra Natural <sup>™</sup> Certified Organic <sup>3</sup> )	3.5
	Persea Gratissima (Avocado) Oil (Avocado Oil Certified Organic <sup>3</sup> )	6.0
	Simmondsia Chinensis (Jojoba) Seed Oil (Jojoba Oil-Natural Golden-Certified Organic <sup>3</sup> )	3.0
<b>D</b>	Preservative	q.s.

**Procedure:** While heating the water to 75°C, slowly add the **VANATURAL**<sup>®</sup> and **VANZAN**<sup>®</sup> NF (sequentially or as a dry blend) while mixing at maximum available shear. Mix until fully hydrated. Prepare Part B by dissolving aloe vera powder in water then add slowly to Part A. Maintain the water phase temperature at 75°C. Combine Part C ingredients and heat to 75°C. Add Part C oil phase to Part A/B water phase and mix thoroughly. Cool with mixing; add Part D when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Terry Laboratories, Inc., Melbourne, FL

<sup>2</sup>Actives International, Allendale, NJ

<sup>3</sup>BioChemica Int'l, Inc., Melbourne, FL

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Xyliance is a trademark of Soliance.

Rev01/30/2013

**All Natural Shea Butter/Cocoa Butter Lotion No. 589**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL</b> <sup>®</sup> Bentonite Clay	2.5
<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.5
Water	78.0
<b>B</b>   Cetearyl Wheat Straw Glycosides (and) Cetearyl Alcohol (Xyliance <sup>™1</sup> )	5.0
Orbignya Oleifera Seed Oil (Cropure <sup>®</sup> Babassu <sup>2</sup> )	5.0
Simmondsia Chinensis (Jojoba) Seed Oil (Jojoba Oil Golden <sup>3</sup> )	5.0
Butyrospermum Parkii (Shea) Butter (Tomasia Shea Butter <sup>4</sup> )	2.0
Theobroma Cacao (Cocoa) Seed Butter (Cocoa Butter NF <sup>5</sup> )	2.0
<b>C</b>   Preservative	q.s.

**Procedure:** While heating the water to 70-75°C, slowly add the **VANATURAL**<sup>®</sup> and **VANZAN**<sup>®</sup> NF sequentially or as a dry blend to the water agitated at maximum available shear. Mix until fully hydrated. Maintain the water phase at 70-75°C. Blend the Part B oil phase ingredients and heat to 70-75°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add Part C when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Actives International, Allendale, NJ

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

<sup>3</sup>Desert Whale Jojoba Co., Inc., Tucson, AZ

<sup>4</sup>Tri-K Industries, Inc., Northvale, NJ

<sup>5</sup>RITA Corporation, Crystal Lake, IL

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Cropure is a registered trademark of Croda, Inc.

Xyliance is a trademark of Soliance.

Rev01/21/2013

**Natural Skin Cream No. 599**

	<b>Wt. %</b>
<b>A</b>	<b>VANATURAL<sup>®</sup> XGB</b> Bentonite Clay 3.00
	Sucrose Stearate (Surfhope <sup>®</sup> SE Cosme C-1811 <sup>1</sup> ) 1.25
	Avena Sativa (Oat) Kernal Flour (Tech-O <sup>®</sup> #11-070 Oat Flour <sup>2</sup> ) 1.00
	Water 81.75
<b>B</b>	Propanediol (Zemea <sup>®</sup> Propandiol <sup>3</sup> ) 5.00
<b>C</b>	Triticum Vulgar (Wheat) Germ Oil (Wheat Germ Oil <sup>4</sup> ) 5.00
	Cetearyl Alcohol 3.00
<b>D</b>	Preservative q.s.

**Procedure:** While heating the water to 60-65°C, slowly add the Part A ingredients sequentially or as a dry blend to the water agitated at maximum available shear. Mix until the **VANATURAL<sup>®</sup> XGB** is fully hydrated. Add Part B, and mix until uniform. Maintain the water phase at 60-65°C. Combine the oil phase ingredients in Part C and heat to 60-65°C. Add the oil phase to the water phase with good agitation; mix until uniform. Avoid incorporating air. Cool with mixing; add Part D when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Arch Personal Care Products L.P., South Plainfield, NJ

<sup>2</sup>Beacon CMP Corp., Kenilworth, NJ

<sup>3</sup>DuPont Tate & Lyle Bio Products Company, LLC, Wilmington, DE

<sup>4</sup>Desert Whale Jojoba Co., Inc., Tucson, AZ

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Surfhope is a registered trademark of Mitsubishi Chemical Corporation.

Tech\_O is a registered trademark of Beacon CMP Corporation.

Zemea is a registered trademark of DuPont Tate &amp; Lyle Bio Products Company, LLC.

Rev07/02/2013

**Natural Moisturizing Lotion No. 601**

		<b>Wt. %</b>
<b>A</b>	<b>VANATURAL® XGB</b> Bentonite Clay	5.0
	Water	77.5
<b>B</b>	Carthamus Tinctorius (Safflower) Oleosomes/Glycerin/Water (Hydresia™ G2 <sup>1</sup> )	12.5
	Crambe Abyssinica Seed Oil (Fancor® Abyssinian Oil <sup>2</sup> )	5.0
<b>C</b>	Preservative	q.s.

**Procedure:** Add the **VANATURAL® XGB** slowly to the water agitated at high speed. Mix until smooth. Combine and mix Part B ingredients with slow speed/low shear prop mixing until uniform. Refer to the manufacturer's specific recommendations for incorporating oleosomes. Slowly add Part B to Part A with slow to moderate speed mixing until emulsified. Add Part C and mix at slow to moderate speed until uniform.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Botaneco, Bensalem, PA

<sup>2</sup>Elementis Specialties, Hightstown, NJ

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Fancor is a registered trademark of Elementis Specialties, Inc.

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Rev01/21/2013



**Conditioning Skin Cream with Jojoba Oil No. 571**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL<sup>®</sup></b> or <b>VANATURAL MC</b> Bentonite Clay	2.0
Water	73.0
Butylene Glycol	5.0
<b>B</b>   Bis-PEG/PPG-16/16 PEG/PPG-16/16 Dimethicone; Caprylic/capric triglyceride (Abil <sup>®</sup> Care 85 <sup>1</sup> )	1.5
Cetyl Alcohol (and) Glyceryl Stearate (and) PEG-75 Stearate (and) Ceteth-20 (and) Steareth-20 (Emulium <sup>®</sup> Delta <sup>2</sup> )	4.5
Cetyl Rinoleate (Tegosoft <sup>®</sup> CR <sup>1</sup> )	2.0
Simmondsia Chinesis (Jojoba) Seed Oil (Jojoba Oil Golden <sup>3</sup> )	6.0
Cyclomethicone (XIAMETER <sup>®</sup> PMX-0345 Cyclosiloxane Blend <sup>4</sup> )	6.0
<b>C</b>   Preservative, Fragrance	q.s.

**Procedure:** While heating the water to 75°C, slowly add the **VANATURAL<sup>®</sup>** or **VANATURAL MC** while mixing at maximum available shear. Mix until fully hydrated. Add the butylene glycol, mixing until uniform. Maintain the water phase at 75°C. Blend the Part B oil phase ingredients and heat to 75-80°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add the Part C ingredients when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**

<sup>1</sup>Evonik Goldschmidt Chemical Company, Hopewell, VA

<sup>2</sup>Gatefosse Corporation, Paramus, NJ

<sup>3</sup>Desert Whale Jojoba Co., Inc., Tucson, AZ

<sup>4</sup>Dow Corning Corporation, Midland, MI

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Abil is a registered trademark of Goldschmidt GmbH Corporation.

Emulium is a registered trademark of Gatefosse SAS.

Tegosoft is a registered trademark of Goldschmidt GmbH.

Xiameter is a registered trademark of Dow Corning Corporation.

Rev04/17/2017

**Rejuvenating Lotion No. 574**

		<b>Wt. %</b>
<b>A</b>	<b>VANATURAL</b> <sup>®</sup> or <b>VANATURAL MC</b> Bentonite Clay	2.0
	<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.5
	Water	72.5
	Butylene Glycol	3.0
<b>B</b>	Cyclomethicone (and) Dimethicone (and) Petrolatum (Gel Base BSM-PT <sup>1</sup> )	7.0
	C12-15 Alkyl Benzoate (Finsolv <sup>®</sup> TN <sup>2</sup> )	4.0
	Cetearyl Alcohol	1.0
	Glyceryl Stearate (and) PEG-100 Stearate (Arlacel <sup>®</sup> 165 <sup>3</sup> )	5.0
<b>C</b>	Water (and) Aloe Barbedensis Leaf Extract (and) Yeast (Sacchromyces)	5.0
	Extract (Betavera <sup>®1</sup> )	
	Preservative	q.s.

**Procedure:** While heating the water to 70-75°C, slowly add the **VANATURAL**<sup>®</sup> or **VANATURAL MC** and **VANZAN**<sup>®</sup> NF sequentially or as a dry blend to the water agitated at maximum available shear. Mix until fully hydrated. Add the butylene glycol, mixing until uniform. Maintain the water phase at 70-75°C. Blend the Part B oil phase ingredients and heat to 70-75°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add the Part C ingredients in order when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**

<sup>1</sup>Arch Personal Care Products L.P., South Plainfield, NJ

<sup>2</sup>Innospec Active Chemicals, Edison, NJ

<sup>3</sup>Croda, Inc., Edison, NJ

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Arlacel is a registered trademark of Uniqema Americas LLC.

Betavera is a registered trademark of Arch Personal Care Products L.P.

Finsolv is a registered trademark of Innospec Performance Chemicals Company.

Rev04/17/2017

**Skin Cream Base No. 565**

	<b>Wt. %</b>
<b>A</b>   <b>VEEGUM<sup>®</sup> PURE</b> Magnesium Aluminum Silicate	2.0
Water	79.5
Glycerin, USP Grade	2.0
<b>B</b>   Glyceryl Stearate (Protachem <sup>™</sup> GMS-450 <sup>1</sup> )	2.0
Cetearyl Alcohol (Protachem <sup>™</sup> CS-50 <sup>1</sup> )	2.0
Sodium Steroyl Lactylate (Pationic <sup>®</sup> SSL <sup>2</sup> )	1.0
Shea Butter <sup>3</sup>	2.0
Rice Bran Oil <sup>4</sup>	4.0
Olive Squalene (Pripure <sup>®</sup> 3759 <sup>5</sup> )	2.0
Caprylic/Capric Triglyceride (Neobee <sup>®</sup> M-5 <sup>6</sup> )	2.0
Tocopherol (Covi-ox <sup>®</sup> T50 <sup>7</sup> )	0.5
<b>C</b>   Vitamin E Acetate, USP <sup>7</sup>	1.0
<b>D</b>   Preservative	q.s.

**Procedure:** Slowly add the **VEEGUM<sup>®</sup> Pure** to the water while mixing at maximum available shear. Mix as the water temperature is raised to 80°C, until fully hydrated. Add the glycerin and maintain the Part A temperature at 80°C. Combine Part B ingredients and heat to 80°C with stirring. Add Part B to Part A with adequate mixing, then add Part C. Cool to 35°C while mixing and add Part D. Continue to cool with mixing and pour off at 30°C.

**RAW MATERIAL SUPPLIERS**

<sup>1</sup>Protameen Chemicals, Totowa, NJ

<sup>2</sup>Rita Corporation, Crystal Lake, IL

<sup>3</sup>TRI-K Industries, Inc., Northvale, NJ

<sup>4</sup>Arista Industries, Inc., Wilton, CT

<sup>5</sup>Croda, Inc., Edison, NJ

<sup>6</sup>Stepan Company, Northfield, IL

<sup>7</sup>BASF Corporation, Florham Park, NJ

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Covi-ox is a registered trademark of Cognis Corporation.

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Pationic is a registered trademark of Caravan Ingredients, Inc.

Pripure is a registered trademark of Unichema Chemie B.V.

Protachem is a trademark of Protameen Chemicals.

Rev01/21/2013

**Oatmeal Lotion No. 586**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL</b> <sup>®</sup> or <b>VANATURAL MC</b> Bentonite Clay	2.50
Water	73.25
Avena Sativa (Oat) Kernel Flour (Tech-O <sup>®</sup> #11-070 Oat Flour <sup>1</sup> )	1.00
<b>VANZAN</b> <sup>®</sup> <b>NF</b> Xanthan Gum	0.50
Sucrose Stearate (Sisterna <sup>®</sup> SP50-C <sup>2</sup> )	1.75
<b>B</b>   Sodium PCA (Ajidew <sup>®</sup> NL-50 <sup>3</sup> )	3.00
Glycerin, 96%	5.00
<b>C</b>   Glyceryl Stearate (and) PEG-100 Stearate (Arlacel <sup>®</sup> 165-PW (AP) <sup>4</sup> )	2.00
Hydrogenated Polyisobutene (Parleam <sup>®5</sup> )	4.00
Mineral Oil (and) Lanolin Alcohol (Vilvanolin <sup>™</sup> L-101 <sup>6</sup> )	3.00
Cetyl Alcohol (Crodacol <sup>™</sup> C95-PA-MH <sup>4</sup> )	2.00
Isopropyl Myristate NF (RITA IPM <sup>7</sup> )	2.00
<b>D</b>   Preservative	q.s.
Citric Acid, 20%	q.s.

**Procedure:** While heating the water to 50-55°C, sift the **VANATURAL**<sup>®</sup> or **VANATURAL MC** into the water agitated at maximum available shear. Once dispersed, slowly sift in the oat flour. Mix until the **VANATURAL** or **VANATURAL MC** is fully hydrated and the oat flour is well dispersed. Add the **VANZAN**<sup>®</sup> **NF** and mix until dissolved. Add the sucrose stearate and mix until uniform. Add Part B ingredients and mix thoroughly. Maintain the water phase at 50-55°C. Blend the Part C oil phase ingredients and heat to 50-55°C. Add the oil phase to the water phase with good agitation; mix until uniform. Avoid incorporating air. Cool with mixing; add the preservative when the emulsion is <35°C. Adjust pH to 5.5 ± 0.5 with citric acid.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Beacon CMP Corporation, Kenilworth, NJ

<sup>2</sup>Sisterna B.V., The Netherlands (Dist. In US & Canada by MMP, Inc., South Plainfield, NJ)

<sup>3</sup>Ajinimoto USA, Inc., Fort Lee, NJ

<sup>4</sup>Croda, Inc., Edison, NJ

<sup>5</sup>Rossow USA, Inc., Matawan, NJ

<sup>6</sup>Lubrizol Advanced Materials, Inc., Cleveland, OH

<sup>7</sup>RITA Corporation, Crystal Lake, IL

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Crodacol is a trademark of Croda, Inc.

Parleam is a registered trademark of Rossow.

Sisterna is a registered trademark of Sisterna B.V.

Tech-O is a registered trademark of Beacon CMP Corporation.

Vilvanolin is a trademark of Lubrizol Advanced Materials, Inc.

rev01/18/2018



**Nature's Defense Cream No. 572**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL<sup>®</sup></b> or <b>VANATURAL MC</b> Bentonite Clay	2.0
Water	76.5
Pentylene Glycol (Hydrolite <sup>®</sup> -5 <sup>1</sup> )	5.0
<b>B</b>   Sucrose Stearate (Surfhope <sup>®</sup> SE Cosme C-1811 <sup>2</sup> )	3.0
Cetearyl Alcohol	2.5
Isohexadecane (Arlamol <sup>®</sup> HD <sup>3</sup> )	3.0
Cetearyl Ethylhexanoate (Luvitol <sup>®</sup> EHO <sup>4</sup> )	3.0
Squalane, ubiquinone (Lipogard <sup>™</sup> 5)	4.0
Dimethicone (Xiameter <sup>®</sup> PMX-200 Silicone Fluid 350cs <sup>6</sup> )	1.0
<b>C</b>   Preservative	q.s.

**Procedure:** While heating the water to 70°C, slowly add the **VANATURAL<sup>®</sup>** or **VANATURAL MC** while mixing at maximum available shear. Mix until fully hydrated. Add the pentylene glycol, mixing until uniform. Maintain the water phase at 70°C. Blend the Part B oil phase ingredients and heat to 70-75°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add Part C when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Symrise, Teterboro, NJ

<sup>2</sup>Lonza, Inc., Allendale, NJ

<sup>3</sup>Croda, Inc., Edison, NJ

<sup>4</sup>BASF Corp., Florham Park, NJ

<sup>5</sup>Pentapharm, Ltd., Basel,

Switzerland/Centerchem, Inc., Norwalk, CT

<sup>6</sup>Dow Corning Corporation, Midland, MI

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Hydrolite is a registered trademark of Symrise GmbH.

Lipogard is a trademark of Pentapharm Ltd.

Luvitol is a registered trademark of BASF Aktiengesellschaft.

Surfhope is a registered trademark of Mitsubishi Chemical Corporation.

Xiameter is a registered trademark of Dow Corning Corporation.

Rev04/17/2017

**Moisturizing Cream No. 611**

	<b>Wt. %</b>
<b>A</b>	<b>VEEGUM<sup>®</sup> PURE</b> Magnesium Aluminum Silicate 1.5
	Water 74.5
	Glycerin 4.0
	Triethanolamine, 99% 1.0
<b>B</b>	Stearic Acid 2.0
	Cetyl Alcohol 2.0
	Isopropyl Myristate 2.0
	Lanolin Oil (Lantrol <sup>®</sup> 1673 Lanolin Oil <sup>1</sup> ) 10.0
	Glyceryl Stearate (and) PEG-100 Stearate (Arlacel <sup>®</sup> 165 <sup>2</sup> ) 3.0
<b>C</b>	Preservative q.s.

**Procedure:** Begin heating the water to 70-75°C. Add the **VEEGUM<sup>®</sup> PURE** to the water slowly, agitating at maximum available shear until fully hydrated. Add the remaining water phase ingredients; mix until uniform. Maintain the water phase at 70-75°C. Blend the Part B oil phase ingredients and heat to 70-75°C. Add Part B to Part A with good agitation; mix until uniform. Cool with mixing; add the Part D ingredients when the temperature cools to ≤35°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>BASF Corp., Florham Park, NJ

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

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Arlacel is a registered trademark of Uniqema Americas LLC.

Lantrol is a registered trademark of Cognis IP Management GmbH.

Rev08/27/2012

**Beauty Fluid with Collagen No. 587**

	<b>Wt. %</b>
<b>A</b>	<b>VANATURAL</b> <sup>®</sup> or <b>VANATURAL MC</b> Bentonite Clay 2.50
	Water 73.00
	Avena Sativa (Oat) Kernel Flour (Tech <sup>®</sup> O #11-070 Oat Flour <sup>1</sup> ) 0.50
	<b>VANZAN</b> <sup>®</sup> <b>NF</b> Xanthan Gum 0.50
	Sucrose Stearate (Surfhope <sup>®</sup> SE Cosme C-1811 <sup>2</sup> ) 1.25
<b>B</b>	Glycerin 6.00
	Soluble Collagen (and) Water (aqua) (Collasol <sup>™</sup> M <sup>3</sup> ) 5.00
	Allantoin 0.25
<b>C</b>	DEA-Oleth-3 Phosphate (Crodafos <sup>™</sup> O3D <sup>3</sup> ) 1.00
	Hydrogenated Polyisobutene (Parleam <sup>®4</sup> ) 4.00
	Mineral Oil (and) Lanolin Alcohol (Vilvanolin <sup>™</sup> L-101 <sup>5</sup> ) 3.00
	Cholesterol and Lanesterol Esters of C10-C30 Fatty Acids (Super Sterol Ester <sup>3</sup> ) 2.00
	Dimethicone (Xiameter <sup>®</sup> PMX-200 Silicone Fluid 350cs <sup>6</sup> ) 1.00
<b>D</b>	Preservative q.s.
	Triethanolamine q.s.

**Procedure:** Sift the **VANATURAL**<sup>®</sup> or **VANATURAL MC** into the water agitated at maximum available shear. Once dispersed, slowly sift in the oat flour. Mix until the **VANATURAL** or **VANATURAL MC** is fully hydrated and the oat flour is well dispersed. Add the **VANZAN**<sup>®</sup> **NF** and mix until dissolved. Add the sucrose stearate and mix until uniform. Add Part B ingredients in the order listed and mix until uniform. Combine Part C ingredients and mix until uniform. Add Part C to Part A/B and mix until uniform. Add the preservative and adjust pH to 6.5 ± 0.5 with triethanolamine.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Beacon CMP Corporation, Kenilworth, NJ

<sup>2</sup>Lonza, Inc., Allendale, NJ

<sup>3</sup>Croda, Inc., Edison, NJ

<sup>4</sup>Rosow Cosmetiques-USA, Laurel, NY

<sup>5</sup>Lubrizol Advanced Materials, Inc., Cleveland, OH

<sup>6</sup>Dow Corning Corporation, Midland, MI

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Collasol and Crodafos are trademarks of Croda, Inc.

Parleam is a registered trademark of Etablissements B. Rosow et Cie.

Surfhope is a registered trademark of Mitsubishi Chemical Corporation.

Tech-O is a registered trademark of Beacon CMP Corporation.

Vilvanolin is a trademark of Lubrizol Advanced Materials, Inc.

Xiameter is a registered trademark of Dow Corning Corporation.

Rev04/17/2017

**Skin Renewal Cream No. 573**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL<sup>®</sup></b> or <b>VANATURAL MC</b> Bentonite Clay	2.5
Water	77.0
Glycerin	5.0
<b>B</b>   Cetearyl Alcohol (and) PEG-40 Castor Oil (and) Sodium Cetearyl Sulfate (Emulgade <sup>®</sup> F <sup>1</sup> )	5.0
Postassium Cetyl Phosphate (Crodafos <sup>™</sup> MCK <sup>2</sup> )	0.5
Dicaprylyl Carbonate (Cetiol <sup>®</sup> CC <sup>1</sup> )	5.0
C12-15 Alkyl Ethylhexanoate (Finester <sup>™</sup> EH-25 <sup>3</sup> )	5.0
<b>C</b>   Preservative	q.s.

**Procedure:** While heating the water to 80°C, slowly add the **VANATURAL<sup>®</sup>** or **VANATURAL MC** while mixing at maximum available shear. Mix until fully hydrated. Add the glycerin, mixing until uniform. Maintain the water phase at 80°C. Blend the Part B oil phase ingredients and heat to 80°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add Part C when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>BASF Corp., Florham Park, NJ

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

<sup>3</sup>Innospec Active Chemicals, Edison, NJ

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Cetiol is a registered trademark of Cognis GmbH.

Crodafos is a trademark of Croda, Inc.

Emulgade is a registered trademark of Cognis GmbH.

Finester is a trademark of Innospec Performance Chemicals Company.

Rev04/17/2017



**Oatmeal & Macadamia Cream No. 588**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL</b> <sup>®</sup> Bentonite Clay	2.50
Water	82.25
Avena Sativa (Oat) Kernel Flour (Tech-O <sup>®</sup> #11-070 Oat Flour <sup>1</sup> )	1.00
<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.50
Sucrose Stearate (Surfhope <sup>®</sup> SE Cosme C-1811 <sup>2</sup> )	1.25
<b>B</b>   Butylene Glycol	5.00
<b>C</b>   Macadamia Ternifolia Seed Oil (SCB Macadamia Oil <sup>3</sup> )	4.50
Cetearyl Alcohol	3.00
<b>D</b>   Preservative	q.s.

**Procedure:** While heating the water to 60-65°C, slowly add the **VANATURAL**<sup>®</sup> while mixing at maximum available shear. Once dispersed, slowly sift in the oat flour. Mix until the **VANATURAL** is fully hydrated and the oat flour is well dispersed. Add the **VANZAN**<sup>®</sup> NF and mix until dissolved. Add the sucrose stearate and mix until uniform. Add the butylene glycol and mix thoroughly. Maintain the water phase at 60-65°C. Blend the Part C oil phase ingredients and heat to 60-65°C. Add the oil phase to the water phase with good agitation; mix until uniform. Avoid incorporating air. Cool with mixing; add Part D when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Beacon CMP Corporation, Kenilworth, NJ

<sup>2</sup>Arch Personal Care Products L.P., South Plainfield, NJ

<sup>3</sup>Southern Cross Botanicals PTY Ltd., Lennox Head, NSW Australia

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Surfhope is a registered trademark of Mitsubishi Chemical Corporation.

Tech-O is a registered trademark of Beacon CMP Corporation.

Rev12/15/2014

**Skin Softening Cream No. 575**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL<sup>®</sup></b> or <b>VANATURAL MC</b> Bentonite Clay	2.0
Water	72.2
Butylene Glycol	5.0
<b>B</b>   Glyceryl Stearate SE (Cutina <sup>®</sup> GMS SE <sup>1</sup> )	9.0
Cetyl Alcohol (Crodacol <sup>™</sup> C-95 NF <sup>2</sup> )	1.2
Caprylic/Capric Triglyceride (Neobee <sup>®</sup> M-5 Cosmetic <sup>3</sup> )	1.5
C12-15 Alkyl Benzoate (Finsolv <sup>®</sup> TN <sup>4</sup> )	4.6
Decyl Oleate (Tegosoft <sup>®</sup> DO <sup>5</sup> )	2.0
PEG-14 Dimethicone (Abil <sup>®</sup> B 8843 <sup>5</sup> )	0.5
Phenyl Trimethicone (Dow Corning <sup>®</sup> 556 Cosmetics Grade Fluid <sup>6</sup> )	2.0
<b>C</b>   Preservative	q.s.

**Procedure:** While heating the water to 75°C, slowly add the **VANATURAL<sup>®</sup>** or **VANATURAL MC** while mixing at maximum available shear. Mix until fully hydrated. Add the butylene glycol, mixing until uniform. Maintain the water phase at 75°C. Blend the Part B oil phase ingredients and heat to 75-80°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add Part C when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Cognis Corporation, Ambler, PA

<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>Evonik Goldschmidt Chemical Corporation, Hopewell, VA

<sup>6</sup>Dow Corning Corporation, Midland, MI

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Abil is a registered trademark of Goldschmidt GmbH Corporation.

Crodacol is a trademark of Croda, Inc.

Cutina is a registered trademark of Cognis IP Management GmbH.

Dow Corning is a registered trademark of Dow Corning Corporation.

Finsolv is a registered trademark of Innospec Performance Chemicals Company.

Neobee is a registered trademark of Stepan Company.

Tegosoft is a registered trademark of Goldschmidt GmbH.

Rev04/17/2017

**Cranberry Seed Face Scrub Cream No. 600**

		<b>Wt. %</b>
<b>A</b>	<b>VANATURAL<sup>®</sup> XGB</b> Bentonite Clay	5.0
	Water	63.5
	Glycerin	2.0
<b>B</b>	Carthamus Tinctorius (Safflower) Oleosomes/Glycerin/Water (Hydresia™ G2 <sup>1</sup> )	12.5
<b>C</b>	Decyl Glycocide (Plantaren <sup>®</sup> 2000 N UP <sup>2</sup> )	7.0
	Cocamidopropyl Betaine (Amphosol <sup>®</sup> CA <sup>3</sup> )	3.0
<b>D</b>	Vaccinium Macrocarpon (Cranberry) Seed (ESP Cranberry Seeds 30+ <sup>4</sup> )	5.0
<b>E</b>	Cocamide DEA (Ninol <sup>®</sup> 40-CO <sup>3</sup> )	2.0
<b>F</b>	Preservative	q.s.

**Procedure:** Add the **VANATURAL<sup>®</sup> XGB** slowly to the water agitated at high speed. Mix until smooth. Add the glycerin and mix until uniform. With slow speed/low shear prop mixing, add Part B and mix until uniform. Refer to the manufacturer's specific recommendations for incorporating oleosomes. With slow speed mixing, to avoid air incorporation, add Parts C, D, E and F in order, mixing until the batch is thickened and uniform.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Botaneco, Bensalem, PA

<sup>2</sup>BASF Corp., Florham Park, NJ

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

<sup>4</sup>Earth Supplied Products, Naples, FL

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Amphosol is a registered trademark of Stephan Company.

Hydresia is a trademark of SemBioSys Genetics Inc.

Ninol is a registered trademark of Stephan Company.

Plantaren is a registered trademark of Cognis GmbH.

Rev01/21/2013

**Natural Exfoliant Scrub No. 576**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL</b> <sup>®</sup> Bentonite Clay	3.00
<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.75
Water	75.75
<b>B</b>   Decyl Glucoside (Plantaren <sup>®</sup> 2000N <sup>1</sup> )	7.00
<b>C</b>   Cocamidopropyl Betaine (Amphosol <sup>®</sup> CA <sup>2</sup> )	3.00
Propylene Glycol (and) Water (and) <i>Mentha</i> Piperita (Peppermint) Leaf	2.00
Extract (and) <i>Mentha</i> Piperita (Peppermint) Oil (Aromaphyte of Peppermint <sup>3</sup> )	
Water (and) Melaleuca Oil (and) Ethoxylated Castor Oil (and) Polysorbate 20	1.50
(Water-Soluble Tea Tree Oil <sup>4</sup> )	
<b>D</b>   Zea Mays (Corn) Cob Powder (Processed Corn Cob (60/100)) <sup>5</sup>	5.00
<b>E</b>   Cocamide DEA (Ninol <sup>®</sup> 40-CO <sup>2</sup> )	2.00
<b>F</b>   Preservative	q.s.

**Procedure:** Slowly add the **VANATURAL**<sup>®</sup> and **VANZAN**<sup>®</sup> NF sequentially or as a dry blend to the water agitated at maximum available shear. Mix until fully hydrated. Slowly add Parts B, C, D, E and F in order, mixing after each until smooth while avoiding air entrapment and foaming.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Cognis Corporation, Ambler, PA

<sup>2</sup>Stepan Company, Northfield, IL

<sup>3</sup>Active Organics Inc., Lewisville, TX

<sup>4</sup>Southern Cross Botanicals PTY Ltd, Lennox Head, NSW, Australia

<sup>5</sup>Mt. Pulaski Products, Inc., Mt. Pulaski, IL

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Amphosol and Ninol are registered trademarks of Stepan Company.

Plantaren is a registered trademark of Cognis GmbH.

Rev07/01/2013



**Mild Pearlizing Shower Wash No. 564**

		<b>Wt. %</b>
<b>A</b>	<b>VEEGUM<sup>®</sup> Pure</b> Magnesium Aluminum Silicate	1.5
	Water	48.0
<b>B</b>	Alkyl Sulfonate (Hostapur <sup>®</sup> SAS 30 <sup>1</sup> )	24.0
	Coco Betaine (Dehyton <sup>®</sup> AB-30 <sup>2</sup> )	18.0
	PEG-7, Glyceryl Cocoate (Cetiol <sup>®</sup> HE <sup>2</sup> )	4.0
	Glycol Distearate (Cutina <sup>®</sup> AGS <sup>2</sup> )	4.0
<b>C</b>	Sodium Chloride	1.2
<b>D</b>	Preservative	q.s.

**Procedure:** Slowly add the **VEEGUM<sup>®</sup> Pure** to the water while mixing at maximum available shear. Mix as the water temperature is raised to 80°C, until fully hydrated. Combine the first three ingredients in Part B and heat with light mixing to 80°C. Dissolve the last ingredient into this mixture. Maintain the Part B temperature at 80°C. Add Part B to Part A with adequate mixing, then add Part C. Mix until dissolved. Cool to 35°C while mixing and add Part D. Continue to cool with mixing and pour off at 30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Clariant Corporation, Charlotte, NC

<sup>2</sup>BASF Corp., Florham Park, NJ

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Cetiol is a registered trademark of Cognis GmbH.

Cutina is a registered trademark of Cognis IP Management GmbH.

Dehyton is a registered trademark of Cognis IP Management GmbH.

Hostapur is a registered trademark of Hoechst GmbH.

Rev04/17/2017

**Hair Conditioner No. 612**

	<b>Wt. %</b>
<b>A</b>	<b>VANATURAL<sup>®</sup> XGB</b> Bentonite Clay 2.00
	Water 87.15
	Tetrasodium EDTA 0.10
	Glycerin, USP 1.50
<b>B</b>	Glyceryl Stearate (and) PEG-100 Stearate (Arlacel <sup>®</sup> 165 <sup>1</sup> ) 4.00
	Ceteareth-20 (Eumulgin <sup>®</sup> B 2 <sup>2</sup> ) 1.00
	Cetearyl Alcohol 3.00
	PEG-40/PPG-8 Methylaminopropyl/Hydroxypropyl Dimethicone Copolymer (Silsoft <sup>®</sup> A+ <sup>3</sup> ) 1.00
	Butyrospermum Parkii (Shea) Butter (Shea Butter – Certified Organic <sup>4</sup> ) 0.25
<b>C</b>	Preservative q.s.

**Procedure:** While heating the water to 75-80°C, slowly add the **VANATURAL<sup>®</sup> XGB** while mixing at maximum available shear. Mix until fully hydrated. Add the remaining Part A ingredients, mixing until uniform. Maintain the water phase at 75-80°C. Blend the Part B oil phase ingredients and heat to 75-80°C. Add the oil phase to the water phase with good agitation; mix until uniform. Cool with mixing; add Part C when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Croda, Edison, NJ

<sup>2</sup>BASF Corporation, Florham Park, NJ

<sup>3</sup>Momentive, Columbus, OH

<sup>4</sup>BioChemica Int'l., Inc., Melbourne, FL

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Arlacel is a registered trademark of Uniqema Americas LLC.

Eumulgin is a registered trademark of Cognis IP Management GmbH.

Silsoft is a registered trademark of General Electric Company.

Rev08/27/2012

**Natural Hair Conditioner No. 619**

		<b>Wt. %</b>
<b>A</b>	<b>VANATURAL</b> <sup>®</sup> Bentonite Clay	2.00
	<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum	0.75
	Water	76.45
	Tetrasodium Glutamate Diacetate (Dissolvine <sup>®</sup> GL-47-S <sup>1</sup> )	0.20
	Propanediol (Zemea <sup>®</sup> propandiol <sup>2</sup> )	7.50
	Vegetable Derived Glycerin (Pricerine <sup>®</sup> 9091 <sup>3</sup> )	5.00
<b>B</b>	Glyceryl Stearate Citrate (Dermofeel <sup>®</sup> GSC <sup>4</sup> )	2.50
	Glyceryl Caprylate (Dermosoft <sup>®</sup> GMCY <sup>4</sup> )	0.20
	Plumeria Acutifolia Flower Extract (Campo <sup>™</sup> South Pacific True Monoi Oil <sup>5</sup> )	1.00
	Mixed Tocopherols (and) Soybean Oil (Decanox <sup>™</sup> MTS-50 <sup>6</sup> )	0.40
<b>C</b>	Water (and) Hydrolyzed Corn Starch (and) Beta Vulgaris (Beet) Root Extract (DayMoist CLR <sup>™7</sup> )	4.00
<b>D</b>	Preservative	q.s.
	Triethanolamine, 99%	q.s.

**Procedure:** While heating the water to 65-70°C, slowly add the **VANATURAL**<sup>®</sup> and **VANZAN**<sup>®</sup> **NF** sequentially or as a dry blend to the water agitated at maximum available shear. Mix until fully hydrated. Add the rest of Part A ingredients and adjust the batch temperature to 65-70°C, if necessary. Combine Part B ingredients and heat to 65-70°C. When Part A and Part B are each at 65-70°C, add Part B to Part A slowly with adequate mixing. Cool with mixing to 40°C, then add Part C. Continue to cool to 30°C with mixing and add the preservative. If necessary, adjust the pH to 5.5 ± 0.5, with triethanolamine.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Akzo Nobel Surface Chemistry LLC, Bridgewater, NJ

<sup>2</sup>DuPont Tate & Lyle Bio Products Company, LLC, Wilmington, DE

<sup>3</sup>Croda, Inc., Edison, NJ

<sup>4</sup>Dr. Straetmans Chemische Produkte GmbH, Hamburg, Germany

<sup>5</sup>BioOrganic Concepts, Sante Fe Springs, CA

<sup>6</sup>ADM Natural Health and Nutrition Div., Decatur, IL

<sup>7</sup>Chemisches Laboratorium Dr. Kurt Richter GmbH, Berlin, Germany

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Capmo is a trademark of BioOrganic Concepts.

DayMoist CLR is a trademark of Chemisches Laboratorium.

Decanox is a trademark of ADM Natural Health and Nutrition Division.

Dermofeel and Dermosoft are registered trademarks of Dr. Straetmans Chemische

Produkte GmbH.

Dissolvine is a registered trademark of Akzo Nobel Chemicals B.V.

Pricerine is a registered trademark of Croda International.

Zemea is a registered trademark of DuPont Tate &amp; Lyle Bio Products Company, LLC.

Rev09/18/2014

**Liquid Foundation No. 602**

	<b>Wt. %</b>
<b>A</b>   <b>VANATURAL<sup>®</sup> XGB</b> Bentonite Clay	4.00
Water	77.97
Propanediol (Zemea <sup>®</sup> propandiol <sup>1</sup> )	5.00
<b>B</b>   Iron Oxides (and) Microcrystalline Cellulose (C2-5 Yellow LLXLO <sup>2</sup> )	0.40
Iron Oxide (C.I. 77491) (and) Cellulose (C2-5 Red R-516L <sup>2</sup> )	0.10
Iron Oxide (C.I. 77499) (and) Cellulose (C2-5 Black BL-100 <sup>2</sup> )	0.03
Titanium Dioxide (and) Cellulose (and) Alumina (C2-5 TiO <sub>2</sub> CR-50 <sup>2</sup> )	3.50
Mica (and) Cellulose (C2-5 Sericite FSE <sup>2</sup> )	4.00
<b>C</b>   Cetearyl Wheat Straw Glycosides (and) Cetearyl Alcohol (Xyliance <sup>™3</sup> )	5.00
<b>D</b>   Preservative	q.s.

**Procedure:** While heating the water to 75°C, slowly add the **VANATURAL<sup>®</sup> XGB** to the water agitated at maximum available shear. Mix until it is fully hydrated and add the propanediol. Combine the Part B ingredients, then add to Part A and mix until smooth. Maintain the water phase at 75°C. Heat Part C oil phase to 75°C. Add the oil phase to the water phase with good agitation; mix until uniform. Avoid incorporating air. Cool with mixing; add Part D when the emulsion is <30°C.

**RAW MATERIAL SUPPLIERS**

<sup>1</sup>DuPont Tate & Lyle Bio Products Company, LLC, Wilmington, DE

<sup>2</sup>Kobo Products, Inc., South Plainfield, NJ

<sup>3</sup>Actives International, Allendale, NJ

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[http://www.vanderbiltminerals.com/ee\\_content/Documents/Technical/Trademarks\\_VM\\_Web.pdf](http://www.vanderbiltminerals.com/ee_content/Documents/Technical/Trademarks_VM_Web.pdf)

Xyliance is a trademark of Soliance.

Zemea is a registered trademark of DuPont Tate & Lyle Bio Products Company, LLC.

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**Liquid Powder Foundation No. 577**

	<b>Wt. %</b>
<b>A</b>	<b>VANATURAL</b> <sup>®</sup> Bentonite Clay 3.00
	<b>VANZAN</b> <sup>®</sup> NF Xanthan Gum 0.70
	Water 81.27
	Pentylene Glycol (Hydrolite <sup>®</sup> -5 <sup>1</sup> ) 5.00
<b>B</b>	Iron Oxides (and) Microcrystalline Cellulose (C2-5 Yellow LLXLO <sup>2</sup> ) 0.40
	Iron Oxide (C.I. 77491) (and) Cellulose (C2-5 Red R-516L <sup>2</sup> ) 0.10
	Iron Oxide (C.I. 77499) (and) Cellulose (C2-5 Black BL-100 <sup>2</sup> ) 0.03
	Titanium Dioxide (and) Cellulose (and) Alumina (C2-5 TiO <sub>2</sub> CR-50 <sup>2</sup> ) 3.50
	Mica (and) Cellulose (C2-5 Sericite FSE <sup>2</sup> ) 4.00
<b>C</b>	PEG-14 Dimethicone (Abil <sup>®</sup> B 8843 <sup>3</sup> ) 2.00
<b>D</b>	Preservative q.s.

**Procedure:** Slowly add the **VANATURAL**<sup>®</sup> and **VANZAN**<sup>®</sup> NF sequentially or as a dry blend to the water agitated at maximum available shear. Mix until fully hydrated. Add the pentylene glycol, mixing until uniform. Blend Part B and add to A and mix until smooth. Add Part C and Part D in order; mix after each until smooth.

**RAW MATERIAL SUPPLIERS**
<sup>1</sup>Symrise, Teterboro, NJ

<sup>2</sup>Kobo Products, Inc., South Plainfield, NJ

<sup>3</sup>Evonik Goldschmidt Chemical Corporation, Hopewell, VA

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Abil is a registered trademark of Goldschmidt GmbH Corporation.

Hydrolite is a registered trademark of Symrise GmbH.

Rev04/25/13









# Vanderbilt Minerals, LLC

A Wholly Owned Subsidiary of R.T. Vanderbilt Holding Company, Inc.

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