



VANATURAL[®] Bentonite
The **ESSENTIAL** Mineral for Personal Care

VANATURAL ensures the stability and elegance you require and the satin-smooth feel your customers desire.



R. T. Vanderbilt Company, Inc.

INDUSTRIAL MINERALS AND CHEMICALS

A Responsible Care® Company

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VANATURAL®

Bentonite Clay

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Please visit our web site at www.rtvanderbilt.com to obtain the following brochure and information about ordering our pure natural water-washed VANATURAL Bentonite for personal care formulations!

RECOMMENDED READING

VEEGUM® / VAN GEL® Brochure

VANATURAL[®] Bentonite Clay

VANATURAL bentonite clay is pure natural water-washed bentonite for personal care formulations. It disperses easily, hydrates rapidly and performs consistently. **VANATURAL** clay ensures the stability and elegance you require and the satin-smooth feel your customers desire. It is particularly suited for natural and organic personal care products. Its INCI Name is Bentonite.

VANATURAL BENTONITE BENEFITS

- Stabilizes emulsions against separation, particularly at elevated temperatures
- Stabilizes suspensions against particle settling and hard packing
- Provides thickening and absorptive properties in masks and poultices
- Provides a silky, tack-free feel in topical preparations
- Is synergistic with common thickeners such as xanthan gum and CMC
- Reduces the slippery or sticky feel of gums and polymers
- Is compatible with most anionic and nonionic ingredients used in personal care formulations

VANATURAL bentonite is recommended for use in skin renewal creams, hydrator lotions, high SPF sunscreens, baby lotions, foundation makeup, treatment masks – in virtually all topical emulsions and suspensions.

FOR NATURAL AND ORGANIC FORMULAS

VANATURAL bentonite clay is perfectly suited for use in all-natural and organic personal care products. It is in full compliance with the rules established by the USDA National Organic Program (NOP). The NOP provides regulations and guidance for raw materials used in products claimed as organic or as containing organic ingredients (7 CFR 205.600 through 205.607). Bentonite is listed as an allowed ingredient in such products. **VANATURAL** bentonite has been listed by ECOCERT as an approved material in organic cosmetic formulations containing less than 100% organic ingredients.

PREPARATION OF DISPERSIONS

VANATURAL bentonite clay must be properly dispersed in water and hydrated to provide the best results. The two guides to successful hydration are:

1. THE BEST DISPERSIONS ARE PREPARED IN WATER FREE OF ADDITIVES
2. MORE ENERGY INPUT GIVES QUICKER HYDRATION.

Any materials present in the water when **VANATURAL** bentonite is added, including

preservatives, chelating agents or other minor additives, will interfere with hydration and inhibit the formation of the desired colloidal structure. Successful hydration depends on:

- Shear, or mixing intensity
- Heat input, or water temperature
- Mixing Time

VANATURAL bentonite clay disperses easily into water and hydrates rapidly. As shown in the following table, hydration is directly proportional to the amount of energy imparted: it increases as mixing time, mixing intensity or water temperature increase. In emulsions or other formulations requiring heat for preparation, bentonite hydration can be conveniently carried out while the water is being heated. In order to avoid interference with the hydration process, other ingredients should be withheld from the water until after the clay is hydrated.

VANATURAL Bentonite Clay			
Water Temperature	Mixer Type	Mixer Speed rpm	Minimum Suggested Mixing Time
25°C	Homogenizer	3000	20 minutes
75°C	Homogenizer	3000	10 minutes
25°C	Propeller	800	30 minutes
75°C	Propeller	800	20 minutes

In the laboratory or during production, the key to consistent performance of **VANATURAL** bentonite is consistent conditions of hydration. Changes in hydration time, mixer shear, vessel size or water temperature will change results.

SYNERGY WITH ORGANIC GUMS AND POLYMERS

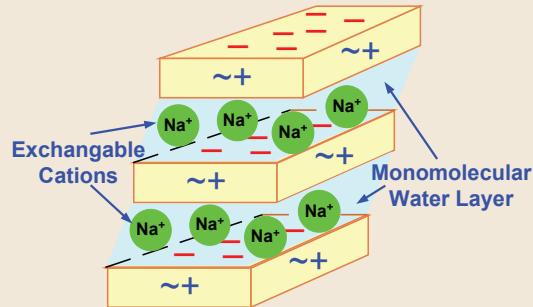
VANATURAL bentonite can be used synergistically with organic thickeners, particularly anionic thickeners such as xanthan gum and CMC. The viscosity or stability of formulations containing such mixtures will be greater than the viscosity or stability of the same formulation made with the individual components of the mixture. These combinations allow the formulator to fine-tune viscosity, yield value, and flow properties beyond what is possible with either the clay or organic thickener alone.

Advantages of combining **VANATURAL** bentonite with an organic thickener are:

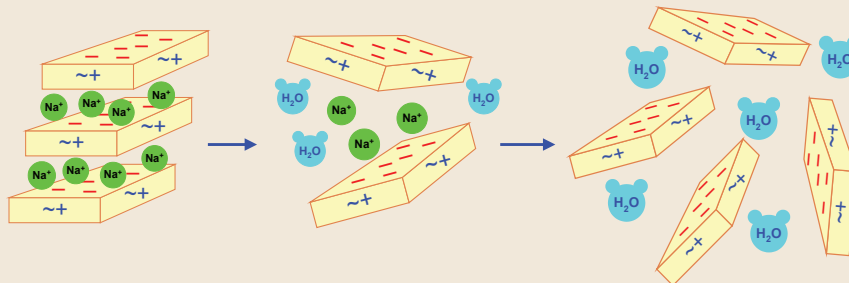
- The combination may be more economical than the use of either component alone.
- The clay can impart yield value to systems thickened with high efficiency organic polymers or gums.
- Because the clay colloidal structure is not sensitive to heat, it can compensate for the loss of viscosity at elevated temperatures common to many organic thickeners.
- The clay can reduce the tacky, gummy or stringy nature of organic thickener solutions.

HOW IT WORKS

The value of **VANATURAL** bentonite in personal care formulas is due to its colloidal structure in water. Each bentonite particle is composed of thousands of submicroscopic flakes stacked in sandwich fashion with a layer of water between each. A single flake is one nanometer thick and up to several hundred nanometers across. The faces of these flakes carry a negative charge, while edges have a slightly positive charge. The net negative charge of the flake is balanced by sodium ions. These charge-balancing ions are associated with flake faces and are termed “exchangeable” since they can be readily substituted by other cations.



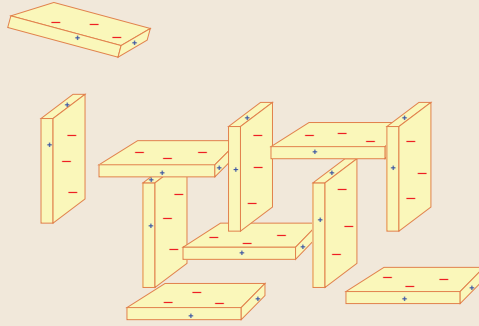
Hydration - When the clay and water are mixed, water penetrates between flakes forcing them further apart. The cations begin to diffuse away from flake faces. Diffusion, the movement of cations from between flakes out into the water, and osmosis, the movement of water into the space between flakes, then promote delamination until the flakes are completely separated.



The speed with which flake separation occurs is directly related to the amount of energy introduced during hydration. Both mechanical and thermal energy accelerate hydration: high shear mixing or the use of warm water will reduce the time required for proper hydration. The presence of dissolved substances in the water will prolong hydration time by inhibiting the diffusion and osmosis essential to flake separation.

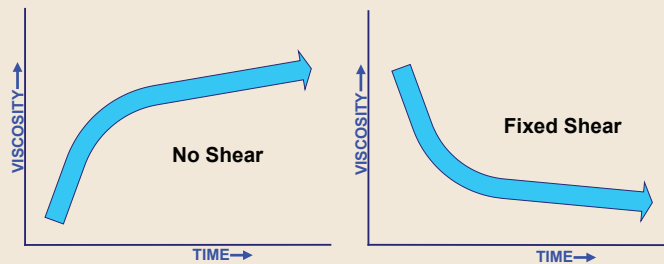
RHEOLOGICAL PROPERTIES

Once the clay is hydrated (i.e., the flakes are separated) the weakly positive flake edges are attracted to the negatively charged flake faces. A three dimensional colloidal structure forms, commonly called the “house of cards”.

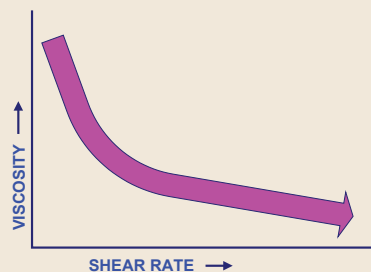


The formation of this colloidal structure accounts for the characteristic rheology imparted by this clay. Dispersions of **VANATURAL** bentonite are pseudoplastic and thixotropic, in addition to contributing useful yield value. This colloidal structure is particularly valued for its ability to trap and segregate solids in a suspension, oils in an emulsion, and gases in a foam or mousse.

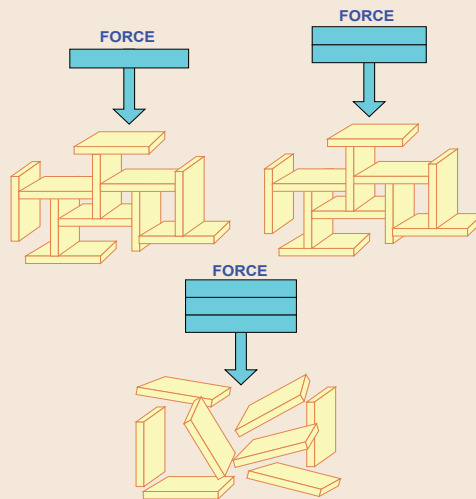
Rheology - After the clay is hydrated, the colloidal structure builds rapidly at first, giving a quick increase in viscosity. As time passes, the remaining free flakes take a longer time to find an available site in the structure, so viscosity increases at a progressively slower rate. Conversely, when a given shear is applied, most of the structure is disrupted quickly, with subsequent breakdown becoming more gradual. The dispersions are therefore thixotropic: undisturbed they increase in viscosity over time, and under a constant shear rate they decrease in viscosity over time.



VANATURAL bentonite dispersions are also pseudoplastic, because increasing the rate of applied shear (thereby increasing structure breakdown) results in decreasing viscosities.

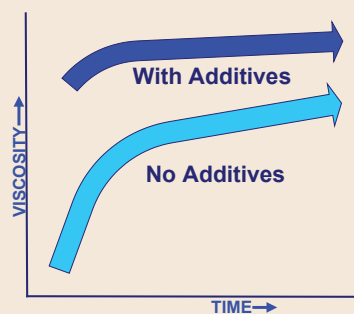


Yield Value - The colloidal structure also provides the clay's most useful property - yield value. This is a measure of the resistance of the structure to breakdown. A certain minimum force, the yield value, must be applied to start disrupting the structure. Solids, oils and gases are trapped and segregated by the structure. They must exert a force greater than the yield value to be able to move through the liquid. This means that the greater the yield value, the more stable the suspension, emulsion or foam.



VANATURAL bentonite can impart yield value even at low viscosity such that stabilization of the dispersed phase is possible even in thin, fluid systems where flowability is important.

Rheology Modifiers - Most water-soluble components will modify the rheological properties of **VANATURAL** bentonite, usually beneficially. Salts, surfactants and water-miscible solvents will increase the clay's viscosity and yield value contribution and decrease thixotropy, but still enable a shear-thinning composition.



Excess water solubles, however, will destabilize the clay's colloidal structure. This may appear as a relatively stable thick gel or as flocculated masses with syneresis.

VANATURAL BENTONITE CLAY FORMULARY

Conditioning Skin Cream with Jojoba Oil No. 571

	Wt. %
A VANATURAL® Bentonite Clay	2.0
Water	73.0
Butylene Glycol	5.0
B Bis-PEG/PPG-16/16 PEG/PPG-16/16 dimethicone; Caprylic/capric triglyceride (Abil® Care 85 ¹)	1.5
Cetyl Alcohol (and) Glyceryl Stearate (and) PEG- 75 stearate (and) Ceteth-20 (and) Steareth-20 (Emulium® Delta ²)	4.5
Cetyl Rinoleate (Tegosoft® CR ¹)	2.0
Simmondsia Chinesis (Jojoba) Seed Oil (Jojoba Oil Golden ³)	6.0
Cyclomethicone (Dow Corning 345 Fluid ⁴)	6.0
C Preservative	qs

¹ Degussa Goldschmidt Chemical Corporation, Hopewell, VA

² Gattefosse Corporation, Paramus, NJ

³ Desert Whale Jojoba Co., Inc., Tuscon, AZ

⁴ Dow Corning Corporation, Midland, MI

Procedure: While heating the water to 75°C, slowly add the **VANATURAL** 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.

Cracked Skin Lotion No. 586

	Wt. %
A VANATURAL Bentonite Clay	2.50
Water	73.25
Avena Sativa (Oat) Kernel Flour (Tech-O®# 11-070 Oat Flour ¹)	1.00
VANZAN® NF Xanthan Gum	0.50
Sucrose Stearate (Surfhope® SE Cosme C-1811 ²)	1.75
B Sodium PCA (Ajidew® NL-50 ³)	3.00
Glycerin, 96%	5.00
C Glyceryl Stearate (and) PEG-100 Stearate (Arlacel® 165 VEG ⁴)	2.00
Hydrogenated Polyisobutylene (Parleam® ⁵)	4.00
Mineral Oil (and) Lanolin Alcohol (Vilvanolin™ L-101 ⁶)	3.00
Cetyl Alcohol	2.00
Isopropyl Myristate	2.00
D Preservative	qs
Citric Acid, 20%	qs

¹ Beacon CMP Corporation., Kenilworth, NJ

² Arch Personal Care Products L.P., South Plainfield, NJ

³ Ajinomoto USA, Inc, Fort Lee, NJ

⁴ Uniqema, New Castle, DE

⁵ Rossow Cosmetics-USA, Laurel, NY

⁶ Lubrizol Advanced Materials, Inc., Cleveland, OH

Procedure: While heating the water to 50-55°C, sift the **VANATURAL** into the water agitated 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 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.

Nature's Defense Cream No. 572

	Wt. %	
A	VANATURAL ® Bentonite Clay	2.0
	Water	76.5
	Pentylene Glycol (Hydrolite®-5 ¹)	5.0
B	Sucrose Stearate (Surfhope® SE Cosme C-1811 ²)	3.0
	Cetearyl Alcohol	2.5
	Isohexadecane (Arlamol® HD emollient ³)	3.0
	Cetearyl Ethylhexanoate (Luvitol® EHO ⁴)	3.0
	Squalane, ubiquinone (Lipogard ⁵)	4.0
	Dimethicone (Dow Corning 200 Fluid, 350 cst ⁶)	1.0
C	Preservative	qs

¹ Symrise, Teterboro, NJ

² Arch Personal Care Products L.P., South Plainfield, NJ

³ Uniqema, New Castle, DE

⁴ BASF Corp., Florham Park, NJ

⁵ Pentapharm, Ltd., Basel, Switzerland/Centerchem, Inc., Norwalk, CT

⁶ Dow Corning Corporation, Midland, MI

Procedure: While heating the water to 70°C, slowly add the **VANATURAL** 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.

Beauty Fluid with Collagen No. 587

	Wt. %	
A	VANATURAL Bentonite Clay	2.50
	Water	73.00
	Avena Sativa (Oat) Kernel Flour (Tech-O®# 11-070 Oat Flour ¹)	0.50
	VANZAN NF Xanthan Gum	0.50
	Sucrose Stearate (Surfhope® SE Cosme C-1811 ²)	1.25
B	Glycerin	6.00
	Soluble Collagen (Collasol M ³)	5.00
	Allantoin	0.25
C	DEA-Oleth-3 Phosphate (Crodofos N-3 Neutral ³)	1.00
	Hydrogenated Polyisobutene (Parkeam® ⁴)	4.00
	Mineral Oil (and) Lanolin Alcohol (Vilvanolin L-101 ⁵)	3.00
	Cholesterol and Lanesterol Esters of C10-C30 Fatty Acids (Super Sterol Ester ³)	2.00
	Dimethicone (Dow Corning 200 Fluid - 350 cs ⁶)	1.00
D	Preservative	qs
	Triethanolamine	qs

¹ Beacon CMP Corporation, Kenilworth, NJ

² Arch Personal Care Products L.P., South Plainfield, NJ

³ Croda, Inc., Edison, NJ

⁴ Rossow Cosmetics-USA, Laurel, NY

⁵ Lubrizol Advanced Materials, Inc., Cleveland, OH

⁶ Dow Corning Corporation, Midland, MI

Procedure: Sift the **VANATURAL** into the water agitated 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 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.

Moisturizing Skin Cream No. 588

		Wt. %
A	VANATURAL ® Bentonite Clay	2.50
	Water	82.25
	Avena Sativa (Oat) Kernel Flour (Tech-O® #11-070 Oat Flour ¹)	1.00
	VANZAN ® NF Xanthan Gum	0.50
	Sucrose Stearate (Surfhope® SE Cosme C-1811 ²)	1.25
B	Butylene Glycol	5.00
C	Macadamia Ternifolia Nut Oil (Australian Macadamia Nut Oil – Cosmetic Grade ³)	4.50
	Cetearyl Alcohol	3.00
D	Preservative	qs

¹ Beacon CMP Corporation, Kenilworth, NJ

² Arch Personal Care Products L.P., South Plainfield, NJ

³ Southern Cross Botanicals Pty, Lennox Head, NSW Australia

Procedure: While heating the water to 60-65°C, slowly add the **VANATURAL** 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 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.

Skin Softening Cream No. 575

		Wt. %
A	VANATURAL Bentonite Clay	2.0
	Water	72.2
	Butylene Glycol	5.0
B	Glyceryl Stearate SE (Dermalcare® GMS/SE ¹)	9.0
	Cetyl Alcohol (CrodaCol™ C-95 NF ²)	1.2
	Caprylic/Capric triglyceride (Neobee® M-5 Cosmetic ³)	1.5
	C12-15 Alkyl Benzoate (Finsolv® TN ⁴)	4.6
	Decyl Oleate (Tegosoft® DO ⁵)	2.0
	PEG-14 dimethicone (Abil® B 8843 ⁵)	0.5
	Phenyl Trimethicone (Dow Corning 556 Cosmetic Grade Fluid ⁶)	2.0
C	Preservative	qs

¹ Rhodia Inc., Cranbury, NJ

² Croda Inc., Edison, NJ

³ Stepan Company, Northfield, IL

⁴ Innospec Active Chemicals, Edison, NJ

⁵ Degussa Goldschmidt Chemical Corporation, Hopewell, VA

⁶ Dow Corning Corporation, Midland, MI

Procedure: While heating the water to 75°C, slowly add the **VANATURAL** 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.

Rejuvenating Lotion No. 574

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

¹Arch Personal Care Products L.P., South Plainfield, NJ

²Innospec Active Chemicals, Edison, NJ

³Uniqema, New Castle, DE

Procedure: While heating the water to 70-75°C, slowly add the **VANATURAL** and **VANZAN 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.

All Natural Lotion No. 589

		Wt. %
A	VANATURAL Bentonite Clay	2.5
	VANZAN NF Xanthan Gum	0.5
	Water	78.0
B	Cetearyl Wheat Straw Glycosides (and) Cetearyl Alcohol (Xyliance™ ¹)	5.0
	Orbignya Oleifera Seed Oil (Cropure® Babassu ²)	5.0
	Simmondsia chinensis (jojoba) seed oil (Jojoba Oil Golden ³)	5.0
	Butyrospermum Parkii (Shea) Butter (Tomaso Shea Butter ⁴)	2.0
	Theobroma cacao (cocoa) seed butter (Cocoa Butter NF ⁵)	2.0
C	Preservative	qs

¹Actives International, Allendale, NJ

²Croda Inc., Edison, NJ

³Dessert Whale Jojoba Co., Tucson, AZ

⁴Tri-K Industries, Inc., Northvale, NJ

⁵RITA Corp., Crystal Lake, IL

Procedure: While heating the water to 70-75°C, slowly add the **VANATURAL** and **VANZAN 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.

Skin Renewal Cream No. 573

	Wt. %	
A	VANATURAL ® Bentonite Clay	2.5
	Water	77.0
	Glycerin	5.0
B	Cetearyl Alcohol (and) PEG-40 Castor Oil (and) Sodium Cetearyl Sulfate (Emulgade® F ¹)	5.0
	Potassium Cetyl Phosphate (Arlatone® MAP 160K ²)	0.5
	Dicaprylyl Carbonate (Cetiol® CC ¹)	5.0
	C12-15 Alkyl Ethylhexanoate (Finester™ EH-25 ³)	5.0
C	Preservative	qs

¹ Cognis Corporation, Ambler, PA

² Uniqema, New Castle, DE

³ Innospec Active Chemicals, Edison, NJ

Procedure: While heating the water to 80°C, slowly add the **VANATURAL** 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.

Organic Skin Lotion No. 594

Soothing Organic Skin Lotion with Calendula Extract No. 595

	No.594 wt.%	No. 595 wt.%
A	VANATURAL Bentonite Clay	2.5
	VANZAN ® NF Xanthan Gum	0.5
	Water	56.0
B	Aloe Vera Gel, from Aloe Vera Whole Leaf Powder Organic Spray Dried 100X ¹ (1% powder/99% water)	20.0
	Cetearyl Wheat Straw Glycosides (and) Cetearyl Alcohol (Xyliance™ ²)	5.0
C	Butyrospermum Parkii (Shea) Butter (Shea Butter-Ultra Refined™ Certified Organic ³)	3.5
	Theobroma cacao (cocoa) seed butter (Cocoa Butter-Ultra Natural™ Certified Organic ²)	3.5
	Persea Gratissima (Avocado) Oil (Avocado Oil Certified Organic ³)	6.0
	Simmondsia Chinensis (Jojoba) Seed Oil (Jojoba Oil Certified Organic ³)	3.0
	Glycerin (and) Water (and) Calendula Officinalis Flower Extract (Certified Organic Calendula Extract ⁴)	-
D	Preservative	q.s.

¹ Terry Laboratories, Inc., Melbourne, FL

² Actives International, Allendale, NJ

³ BioChemica Int'l, Inc., Melbourne, FL

⁴ Bio-Botanica® Inc., Hauppauge, NY

Procedure: While heating the water to 75°C, slowly add the **VANATURAL** and **VANZAN NF** (sequentially or as a dry blend) while mixing at maximum available shear. Mix until fully hydrated. For No. 594, 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 the water phase and mix thoroughly. Cool with mixing to <30°C; then add the Part D ingredients and mix thoroughly after each.

Foot Scrub with Natural Exfoliant No. 576

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

¹ Cognis Corporation, Ambler, PA

² Stepan Company, Northfield, IL

³ Active Organics Inc., Lewisville, TX

⁴ Southern Cross Botanicals PTY Ltd, Lennox Head, NSW, Australia

⁵ Mt. Pulaski Products, Inc., Mt. Pulaski, IL

Procedure: Slowly add the **VANATURAL** and **VANZAN 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.

Liquid Powder Foundation No. 577

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

¹ Symrise, Teterboro, NJ

² Kobo Products, Inc., South Plainfield, NJ

³ Degussa Goldschmidt Chemical Corporation, Hopewell, VA

Procedure: Slowly add the **VANATURAL** and **VANZAN 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.



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