

## VANATURAL®

Bentonite Clay

## VEEGUM®

Magnesium Aluminum Silicate

## VAN GEL®

Mineral Thickener

### PHARMACEUTICAL & COSMETICS GRADES

<b>VEEGUM R</b>	General purpose grade. Magnesium Aluminum Silicate NF Type IA
<b>VEEGUM HV</b>	Higher viscosity grade; functionality similar to <b>VEEGUM R</b> . Magnesium Aluminum Silicate NF Type IC
<b>VEEGUM K</b>	High acid & electrolyte compatibility; used in oral suspensions. Magnesium Aluminum Silicate NF Type IIA
<b>VEEGUM HS</b>	Highest electrolyte stability, minimum acid demand. Purified Bentonite NF

### COSMETIC GRADES

<b>VANATURAL</b>	Fast hydrating bentonite; emulsion and suspension stabilizer for natural and organic formulations. OMRI/ECOCERT/COSMOS grade.
<b>VANATURAL MC</b>	Fast hydrating bentonite; emulsion and suspension stabilizer. Microbiology controlled.
<b>VANATURAL XGB</b>	Bentonite/xanthan gum blend. Rapidly hydrates. Stabilizes water-based suspensions and emulsions. ECOCERT/COSMOS grade.
<b>VANATURAL CA</b>	Quickest hydration, acidic dispersions; for skin-pH topicals.
<b>VEEGUM Ultra</b>	Quickest hydration, uniquely white, acidic dispersions; for skin-pH topicals.
<b>VEEGUM EZ</b>	Quickest hydration, acidic dispersions; for skin-pH topicals.
<b>VEEGUM Pure</b>	Specially processed for organic and natural personal products. OMRI/ ECOCERT/COSMOS grade.
<b>VEEGUM D</b>	Fast hydration; dentifrice binder, emulsion and suspension stabilizer.

### INDUSTRIAL GRADES

<b>VAN GEL B</b>	General purpose grade; for most household, institutional and agricultural applications.
<b>VAN GEL ES</b>	Highest electrolyte stability; for cleaners and cleansers.
<b>VAN GEL SX</b>	Bentonite/xanthan gum blend. High thickening, suspension stabilizing and emulsion stabilizing efficiency.
<b>VAN GEL R</b>	Suitable for most applications; used in industrial and agricultural suspensions. The industrial version of <b>VEEGUM R</b> .
<b>VAN GEL K</b>	High acid & electrolyte compatibility; used in industrial and agricultural suspensions. The industrial version of <b>VEEGUM K</b> .

**VANATURAL**, **VEEGUM** and **VAN GEL** clay products must be properly dispersed in water and hydrated to develop the desired rheological properties. They can be classified by their rate of hydration as a function of energy input. Energy for hydration is supplied by the mechanical shear of the mixer and the heat supplied by the hydration water. Higher mixer shear and higher water temperature accelerate hydration. Solubles in the water when the clay is added can inhibit hydration.

Minimum Suggested Hydration Times	Normal Hydrating	Quick Hydrating	Ultra Hydrating
<i>Based on laboratory scale preparations under practical formulating conditions. Actual hydration times in the laboratory or in production will depend on the particular combination of batch size, mixer shear, and water temperature used.</i>	<b>VEEGUM R</b> <b>VEEGUM K</b> <b>VEEGUM HV</b> <b>VEEGUM Pure</b> <b>VAN GEL B</b> <b>VAN GEL R</b> <b>VAN GEL K</b>	<b>VANATURAL</b> <b>VANATURAL MC</b> <b>VEEGUM HS</b> <b>VEEGUM D</b> <b>VAN GEL ES</b>	<b>VEEGUM Ultra</b> <b>VEEGUM EZ</b> <b>VANATURAL CA</b> <b>VANATURAL XGB</b> <b>VAN GEL SX</b>
<b>Propeller Mixer:</b>			
800 rpm, 25°C water	120 Minutes	30 Minutes	15 Minutes
800 rpm, 75°C water	45 Minutes	20 Minutes	10 Minutes
<b>Homogenizer:</b>			
3000 rpm, 25°C water	30 Minutes	20 Minutes	10 Minutes
3000 rpm, 75°C water	15 Minutes	10 Minutes	10 Minutes

APPLICATION GUIDE	VEEGUM® Magnesium Aluminum Silicate								VANATURAL® Bentonite Clay			
	R	HV	K	HS	Pure	Ultra	EZ	D	OMRI/ ECOCERT	MC	CA	XGB
<b>PHARMACEUTICALS</b>												
Creams, Lotions, Suspensions; pH <6			X	X								
Creams, Lotions, Suspensions; pH >6	X	X										
Anti-dandruff, Treatment Shampoos	X	X										
Tablet Binder/Disintegrant Wet Granulation	X	X										
Tablet Release Regulator Rapid Release / Extended Release	X	X										
Taste Masking	X	X										
<b>PERSONAL CARE</b>												
Creams, Lotions, Suspensions; pH >2												X
Creams, Lotions, Suspensions; pH <6			X	X		X	X		X	X	X	X
Creams, Lotions, Suspensions; pH >6	X	X			X				X	X		X
Sunscreens						X	X			X	X	X
Antiperspirants		X		X								
Depilatories, Perms, Straighteners				X								
Color Cosmetics	X	X			X	X	X		X	X	X	X
Shampoos				X		X	X				X	
Facial Masks				X		X	X		X	X	X	X
Dentifrices		X						X	X	X		X
ECOCERT/COSMOS					X				X			X
OMRI					X				X			

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	B	ES	SX	R	K
<b>INDUSTRIAL</b>					
Alkaline Cleaners	X	X	X		
Acidic Cleaners		X	X		
Bleach Cleaners		X			
Emulsion Polishes			X		
Abrasive Suspensions	X		X	X	X
Pigment Suspensions	X		X	X	X
Agricultural Suspension Concentrates	X	X	X	X	X

For complete information and guidance on the use of these products please see the technical brochures at [www.vanderbiltminerals.com](http://www.vanderbiltminerals.com)

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01/20/23