VAN GEL® SX is a tailored blend of natural bentonite clay and xanthan gum that is an efficient thickener, suspending agent and emulsion stabilizer for HI&I and agricultural formulations.

VAN GEL SX features:

- **Rapid hydration** – Mix until smooth. Hydrates quickly with low shear mixing in unheated water.
- **High yield value** – The synergistic combination of bentonite and xanthan gum effectively and reliably stabilizes water-based suspensions and emulsions.
- **Fine rheology control** – Because the clay-gum synergism provides efficient thickening as well as high yield value, stabilization is possible over a wide range of product viscosity.
- **Wide pH compatibility** – Suitable for use in most cleaners, polishes, agricultural concentrates and industrial suspension and emulsion products. Not recommended for compositions containing oxidizers or more than pH-adjusting levels of alkaline caustics.
- **Broad temperature stability** – Stabilizes suspensions and emulsions in the temperature range typical of storage and transportation.

**Typical Properties:**

- Viscosity, 2%: 300-500 cps
- pH, 2%: 7.5 – 9.5
- Moisture: 8% maximum

Vanderbilt Minerals, LLC, 33 Winfield Street, P.O. Box 5150, Norwalk, CT 06856-5150
Telephone: (800) 562-2476 - Fax: (203) 855-1220 - Web Site: vanderbiltminerals.com

Before using, read, understand and comply with the information and precautions in all applicable Safety Data Sheets, labels and other product literature. The information presented herein, while not guaranteed, was prepared by technical personnel and, to the best of our knowledge and belief, is true and accurate as of the date hereof. No warranty, representation or guarantee, express or implied, is made regarding accuracy, performance, stability, reliability or use. This information is not intended to be all-inclusive, because the manner and conditions of use, handling, storage and other factors may involve other or additional safety or performance considerations. The user is responsible for determining the suitability of any material for a specific purpose and for adopting such safety precautions as may be required. Vanderbilt Minerals, LLC does not warrant the results to be obtained in using any material, and disclaims all liability with respect to the use, handling or further processing of any such material. No suggestion for use is intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patent, trademark or copyright or to violate any federal, state or local law or regulation.
Toilet Bowl Cleaner with “Green” Actives No. 605

<table>
<thead>
<tr>
<th>Wt.%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
</tr>
<tr>
<td>VAN GEL® SX Bentonite Clay (Bentonite (and) Xanthan Gum)</td>
</tr>
<tr>
<td>Water</td>
</tr>
<tr>
<td><strong>B</strong></td>
</tr>
<tr>
<td>L(+)lactic acid, 80% (PURAC® Sanilac&lt;sup&gt;1&lt;/sup&gt;)</td>
</tr>
<tr>
<td>Sodium methyl 2-sulfolaurate &amp; Disodium 2-sulfolaurate (ALPHA-STEP® MC-48&lt;sup&gt;2&lt;/sup&gt;)</td>
</tr>
</tbody>
</table>

**Procedure:** Add the VAN GEL SX slowly to the water agitated at high speed. Mix until fully hydrated. Slowly add the Part B ingredients in order, mixing well after each until uniform. Avoid air entrapment.

**RAW MATERIAL SUPPLIERS**

1. PURAC America, Lincolnshire, IL
2. Stepan Company, Northfield, IL

**TRADEMARKS**

VAN GEL is a registered trademark of R.T. Vanderbilt Holding Company, Inc. or its respective wholly owned subsidiaries.
ALPHA-STEP is a registered trademark of Stepan Company.
PURAC is a trademark of Purac AB.

07/01/2013
Potassium Carbonate Oven Cleaner No. 606

<table>
<thead>
<tr>
<th>Component</th>
<th>Wt.%</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAN GEL® SX Bentonite Clay (Bentonite (and) Xanthan Gum)</td>
<td>2.0</td>
</tr>
<tr>
<td>Water</td>
<td>54.0</td>
</tr>
<tr>
<td>Triethanolamine</td>
<td>10.0</td>
</tr>
<tr>
<td>Tripropylene glycol Methyl Ether Solvent (DOWANOL® TPM¹)</td>
<td>5.0</td>
</tr>
<tr>
<td>Potassium Carbonate, 25% Solution</td>
<td>28.0</td>
</tr>
<tr>
<td>Sodium Cocoyl Sarcosinate, 30% Solution (PERLASTAN® C-30²)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Procedure: Add the VAN GEL SX slowly to the water agitated at high speed. Mix until fully hydrated. Reduce the mixing speed and add the Part B ingredients in order, mixing after each addition until uniform. Avoid air entrapment.

RAW MATERIAL SUPPLIERS
1Dow Chemical Company, Midland, MI
2Struktol Company of America, Stow, OH

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DOWANOL is a registered trademark of Dow Chemical Company.
PERLASTAN is a registered trademark of Schill & Seilacher GmbH.

07/01/2013
Concentrated Phosphoric Acid Gel No. 607

Wt.%

A  | VAN GEL® SX Bentonite Clay (Bentonite (and) Xanthan Gum) | 2.5  
   | Water | 62.5

B  | Phosphoric Acid, 85% | 30.0
   | Octoxynol-9 (TRITON® X-100¹) | 5.0

Procedure: Add the VAN GEL SX slowly to the water agitated at high speed. Mix until fully hydrated. Reduce the mixing speed and add the Part B ingredients in order, mixing after each addition until uniform. Avoid air entrapment.

RAW MATERIAL SUPPLIERS
1Union Carbide Chemicals & Plastics Technology Corporation, Midland, MI

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TRITON is a registered trademark of Union Carbide Chemicals and Plastics Technology Corporation.

07/01/2013
Natural Citrus Furniture Polish No. 608

<table>
<thead>
<tr>
<th></th>
<th>Wt.%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>VAN GEL® SX Bentonite Clay (Bentonite (and) Xanthan Gum) 2.0</td>
</tr>
<tr>
<td></td>
<td>Water</td>
</tr>
<tr>
<td>B</td>
<td>Beeswax Emulsion (BE 720) 10.00</td>
</tr>
<tr>
<td></td>
<td>Carnauba Emulsion (Kahl CE-404A) 10.00</td>
</tr>
<tr>
<td>C</td>
<td>Emulsifying Agent (PLURONIC® L44) 0.35</td>
</tr>
<tr>
<td></td>
<td>Orange Oil (Tech Grade d-limonene) 5.00</td>
</tr>
<tr>
<td>D</td>
<td>Preservative qs</td>
</tr>
</tbody>
</table>

Procedure: Add the VAN GEL SX slowly to the water agitated at high speed. Mix until fully hydrated. Slowly add the Part B and Part C ingredients in order, mixing well after each until uniform. Avoid air entrapment.

RAW MATERIAL SUPPLIERS
1 Lambent Technologies Corp., Gurnee, IL
2 BASF Performance Chemicals, Mount Olive, NJ
3 Florida Chemical, Winter Haven, FL

TRADEMARKS
VAN GEL® is a registered trademark of R.T. Vanderbilt Holding Company, Inc. or its respective wholly owned subsidiaries.
PLURONIC® is a registered trademark of BASF Corporation.

07/01/2013
“Green” Waterless Hand Cleaner No. 615

A | VAN GEL® SX  Bentonite Clay (Bentonite (and) Xanthan Gum) | 4.0
   | Water | 76.0
   | Propylene glycol, USP | 5.0
   | Sodium Lauryl Sulfate (Calfoam® SLS-30\(^1\)) | 1.5
B | Orange Oil (tech grade d-limonene\(^2\)) | 5.0
   | C16-C18 Methyl Ester/Sodium Dioctyl Sulfosuccinate Surfactant Blend (Soygold 2500\(^{TM}\) Rinseable Solvent\(^3\)) | 5.0
C | Juglans Regia (Walnut) Shell Powder (AD-9 Cosmetic Grade (Sterilized) 40/100 Walnut Shell Raw Material\(^4\)) | 3.5
D | Preservative | q.s.

Procedure: Sift the VAN GEL SX into an established vortex in the water. Mix until fully hydrated. Add the Part B ingredients and mix thoroughly after each. Sift in the ground walnut shell abrasive and mix thoroughly. Add the preservative (Part D) and mix thoroughly.

Because of the solvents in the formula, verify compatibility with the intended packaging.

RAW MATERIAL SUPPLIERS
\(^1\)Pilot Chemical Company, Cincinnati, OH
\(^2\)Florida Chemical, Inc., Winter Haven, FL
\(^3\)Ag Environmental Products, LLC, Omaha, NE
\(^4\)Composition Materials Co., Inc., Milford, CT

TRADEMARKS
VAN GEL is a registered trademark of R.T. Vanderbilt Holding Company, Inc. or its respective wholly owned subsidiaries.
Calfoam is a registered trademark of Pilot Chemical Company.
Soygold 2500 is a trademark of AG Environmental Products, LLC

07/01/2013
### Sulfur Flowable (6 lbs/gal), No. 616

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
<th>Wt.%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td><strong>VAN GEL® SX</strong> Bentonite Clay (Bentonite (and) Xanthan Gum)</td>
<td>0.30</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>28.55</td>
</tr>
<tr>
<td></td>
<td><strong>DARVAN® 670</strong> Dispersing Agent (Sodium salt of poly-naphthalene sulfonic</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>acid)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Propylene Glycol</td>
<td>9.50</td>
</tr>
<tr>
<td></td>
<td>2,4,7,9-Tetramethyldec-5-yne-4,7-diol (Surfnol® CT-211 Surfactant&lt;sup&gt;1&lt;/sup&gt;)</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>5-chloro-2-methyl-4-isothiazolin-3-one (and) 2-methyl-4-isothiazolin-3-one</td>
<td>0.15</td>
</tr>
<tr>
<td></td>
<td>(Kathon® CG/ICP II&lt;sup&gt;2&lt;/sup&gt;)</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Sulfur (Yellow Jacket® Wettable Sulfur, 90.0% min.&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>58.90</td>
</tr>
</tbody>
</table>

### Procedure:
Using a Cowles Disperser or equivalent mixer, sift the **VAN GEL SX** into an established vortex in the water. Mix until fully hydrated. Slowly add the **DARVAN 670** and mix until thoroughly dissolved. Then, add the rest of Part B ingredients and mix completely after each. Slowly add the sulfur, Part C, increasing the mixer speed as needed. Mix until thoroughly dispersed.

---

**RAW MATERIAL SUPPLIERS**

<sup>1</sup>Air Products and Chemicals, Inc., Allentown, PA

<sup>2</sup>Dow Chemical, Midland, MI

<sup>3</sup>Georgia Gulf Sulfur Corporation, Valdosta, Georgia

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08/07/2013