

VANSIL[®] Wollastonite



**MORE TOOLS
FOR YOUR
TOOL BOX**



Vanderbilt Chemicals, LLC

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

VANDERBILT CHEMICALS, LLC

R.T. Vanderbilt Company, Inc. opened its doors for business on 42nd Street in New York City in 1916. It was started by a 31 year old named Robert Thurlow Vanderbilt who had \$1,000 of his own, a \$24,000 family loan, and a contract to sell clay for a company in the South.



From these early beginnings Vanderbilt has grown to supply a wide range of products to many different industries, including rubber, plastics, petroleum, paint, CASE, pharmaceutical, agricultural, ceramic, personal care, and household products.

In 2013, R.T. Vanderbilt Company, Inc. was reorganized, resulting in a new corporate structure consisting of a holding company (R.T. Vanderbilt Holding Company, Inc.) and several distinct subsidiaries, including: Vanderbilt Chemicals, LLC, operating chemical manufacturing facilities in Connecticut and Kentucky, which serves the petroleum, rubber and plastics industries, and Vanderbilt Minerals, LLC, operating mining and milling facilities in Kentucky, New York, North Carolina, South Carolina, Nevada, and California. The Vanderbilt companies offer products in the United States and in some 80 countries around the world.

Vanderbilt Worldwide Limited, with an office in Nantwich, UK, provides marketing, technical, and sales support for Vanderbilt Chemicals in Europe, Middle East, and Africa.



In 2010, Vanderbilt opened an office, Vanderbilt (Beijing) Trading, Ltd., in Beijing, China.

YOUR TRUSTED ADVISOR

The Vanderbilt Plastics Department prides itself on our ability to provide more tools for your toolbox by working closely with our customers to help solve compounding and stabilization problems. Our emphasis on new-product development enables us to be responsive to the ever-changing needs of today's plastics industry.



VANSIL® Wollastonite

VANSIL® Wollastonite is an ideal additive for improving the performance of reinforced polymer composites and engineered plastics that are used in a wide variety of industries. It helps to enhance strength and stiffness properties, improve surface quality and durability, and improve dimensional stability by reducing susceptibility to shrinkage and heat distortion. **VANSIL** Wollastonite can also be used in Wire and Cable applications to improve insulation properties leading to attractive cost saving through greater scrap reduction.

	Density		GE Brightness	Median Particle Size, μm	Oil Abs., %	Aspect Ratio
	g/cm ³	lb/gal				
High-Aspect Ratio Grades						
VANSIL WG	2.90	24.2	89	—	40	15:1
VANSIL HR-1500	2.90	24.2	89	9	44	14:1
VANSIL HR-2000	2.90	24.2	89	14	46	14:1

VANSIL[®] Wollastonite

The filler uses for wollastonite are dictated by the length of individual needles in the ore and the extent to which this shape is preserved during milling of the finished products.

	VANSIL [®] WG	VANSIL HR-1500	VANSIL HR-2000
Automotive			
Exterior Parts	X	X	X
Interior Parts/Instrument Panels	X	X	X
Door Handles, Trim Pieces		X	X
Exterior Lamp, Mirror Housing		X	X
Brake Friction/Piston Parts	X		
Truck Bed Liners		X	X
Construction			
Roofing Membranes/Panels	X	X	X
Window, Door Frames		X	X
Wood-Plastic Composites	X	X	X
Flooring	X	X	X
Tub/Shower Surrounds	X		
Consumer			
Wire and Cable	X	X	X
Packaging Film	X	X	X
Power Tool Housing	X	X	X
Sports Equipment	X	X	X

REINFORCING AGENTS

Acicular Grades

Acicular grades are produced from ore containing a suitably high percentage of long needles. The ore is milled in such a way that very fine, needle-like particles are preserved and recovered. Acicular grades typically have aspect ratios of 15:1 to 20:1.



VANSIL[®] Wollastonite

The Study

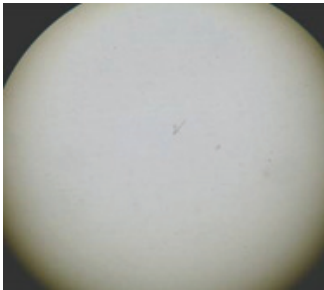
For this study the following formula was used:

- Unstabilized Polypropylene Homopolymer Resin (60%)
- Filler – Variable (40%)
- Stabilization Package (0.2% VANOX[®] 981PP Antioxidant + 0.3% base stabilization (0.05% SONGSTAB[®] SC-110 and 0.25% Epon 1002))

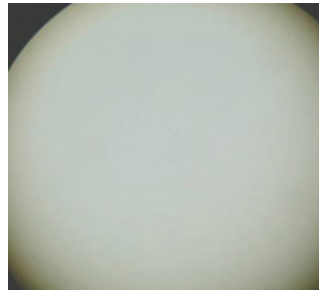
Samples were extruded, pelletized, and injection molded. They were tested for:

- Dispersion/Mix of PP and Filler
- Shrinkage
- Flexural Strength

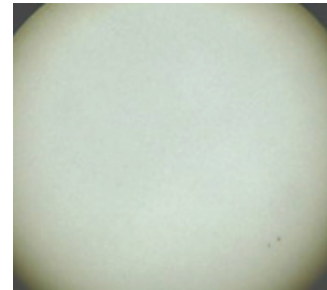
Dispersion: Photomicrographs



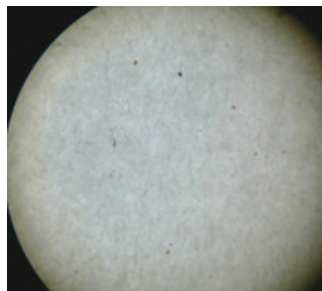
VANSIL[®] HR-1500



CALCIUM CARBONATE



GLASS BEADS

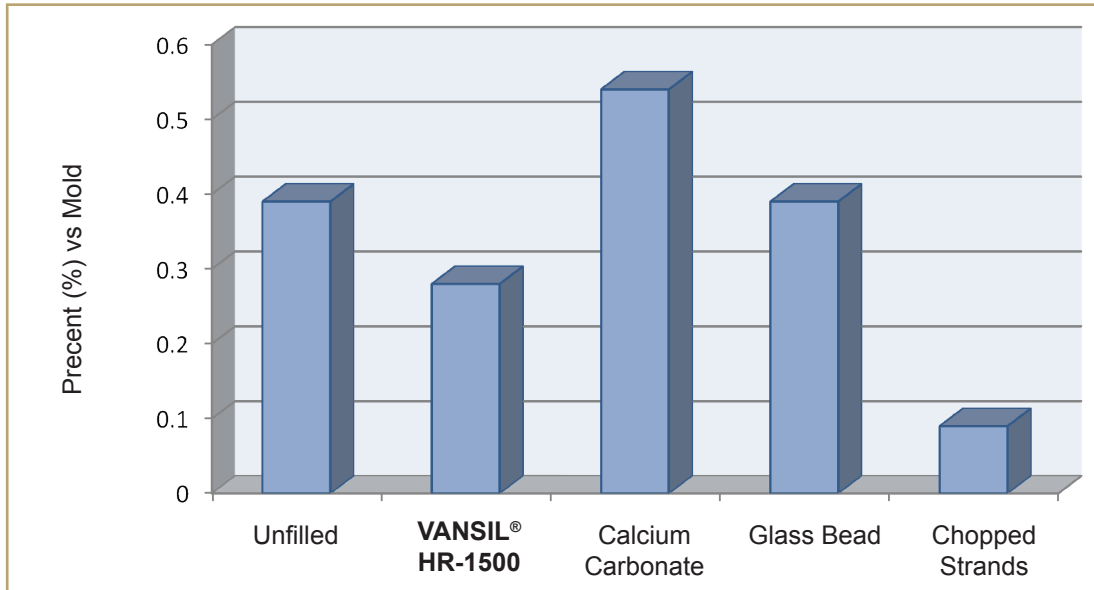


CHOPPED STRANDS

REINFORCING AGENTS

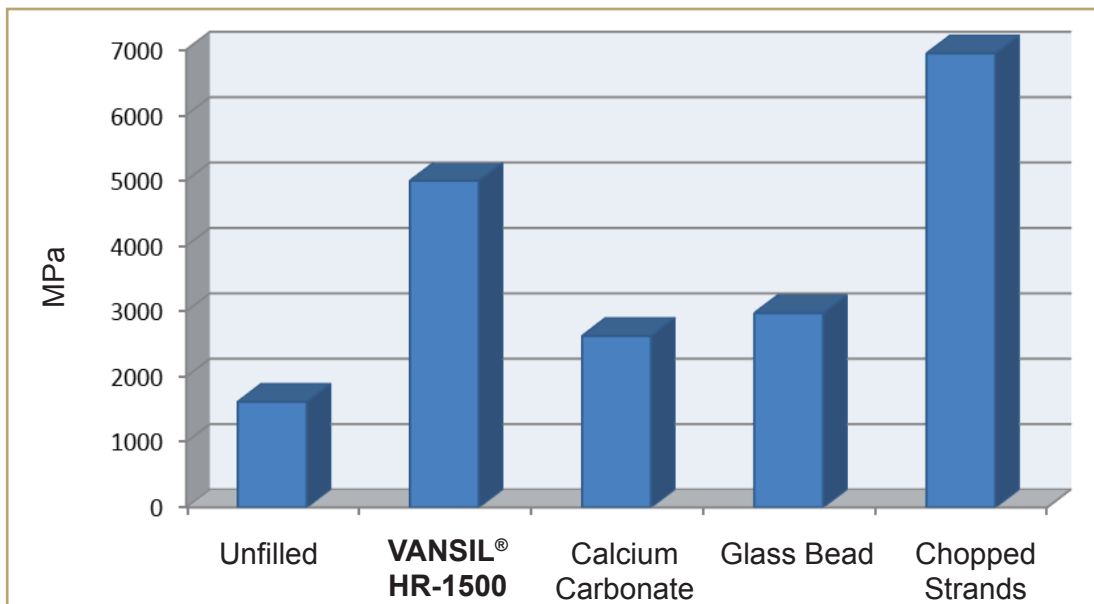
Shrinkage

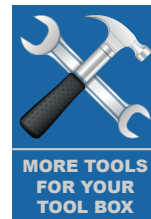
The addition of high aspect ratio **VANSIL®** Wollastonite decreases mold shrinkage.



Flex Modulus

The addition of a filler increased the flex modulus for all compounds. The higher aspect ratio materials showed the largest increase.





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Rev. 01/2019