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VANDERBILT

Technical Data

VANSIL® Acicular Wollastonite

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VANSIL[®] Acicular Wollastonite

VANSIL WG is a high aspect ratio, long needle grade of wollastonite. It is used principally as a reinforcing agent to enhance mechanical strength properties in thermoplastic and thermoset polymer systems where thermal properties, low resin demand, and chemical consistency are also required. Other performance advantages include reduced mold cycle time, low shrinkage, and overall improved dimensional stability.

VANSIL HR-1500 is a high aspect ratio, short needle grade for polyamides and other engineering thermoplastics. It is used as the sole reinforcement agent, or to complement chopped glass fiber in providing strength, impact resistance and dimensional stability. This grade offers similar benefits in thermoset systems.

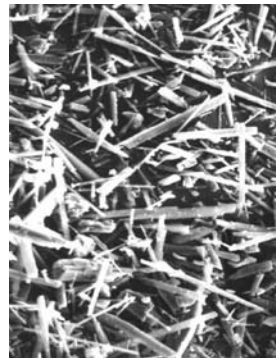
VANSIL HR-325 is a high aspect ratio, micro-needle grade that is designed for engineered polyolefins, such as TPO's, and engineered thermosets, where smoother appearance, improved impact resistance and improved stiffness are critical.

Typical properties by grade:

	VANSIL		
	WG	HR-1500	HR-325
Average aspect ratio	15:1	14:1	12:1
Average needle length, μm	90	60	20
200 mesh retention, %	20	2	--
325 mesh retention, %	--	12	0.02
Surface Area N_2 B.E.T., m^2/g	1.2	1.6	3.7
Bulk density, loose, lbs/ft^3	25	18	16
Bulk density, tapped, lbs/ft^3	41	29	28
Brightness, G.E.	88	88	88
Density, g/cm^3	2.9	2.9	2.9



230X



970X



1700X

Note: Surface treatments are available on request.

Typical chemical analysis (calculated as oxides):

Calcium oxide (CaO)	44.0%
Silicon dioxide (SiO ₂) (by difference)	50.0%
Aluminum oxide (Al ₂ O ₃)	1.8%
Magnesium oxide (MgO)	1.5%
Iron oxide (Fe ₂ O ₃)	0.3%
Sodium oxide (Na ₂ O)	0.2%
Manganese oxide (MnO)	<0.1%
Ignition loss (1000°C)	2.2%

Particle size distribution - SediGraph 5100:

<u>Diameter (μm)</u>	<u>% Finer than Indicated Size</u>	
	VANSIL HR-1500	VANSIL HR-325
20	82.9	99.9
15	71.3	99.7
10	55.2	99.0
5	30.9	92.0
2	9.6	40.3
1	4.0	11.5
Median Diameter (μm)	8.8	2.3

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