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Technical Data

VANSIL[®] Acicular Wollastonite

Controlled needle length high aspect ratio grades

R.T. Vanderbilt Company, Inc.
30 Winfield Street, P.O. Box 5150, Norwalk, CT 06856-5150
Telephone: (203) 853-1400
Fax: (203) 853-1452, Web Site: www.rtvanderbilt.com

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VANSIL® Acicular Wollastonite Controlled needle length high aspect ratio grades

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 |

Before using any product, read, understand and comply with the information and precautions in the MSDS, label and other product literature.

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