D-Encapsulant
Cable Filling Compound

Description
The Vertellus® D-Encapsulant is a two-component, elastomeric polyurethane compound for use in fiber optic and copper cable filling applications. It has a low viscosity and extended pot life to form an effective water block, and excellent flexibility, electrical and long term stability properties. This product is especially applicable for environmental protection of electrical devices.

Typical Properties
The data listed in this product literature are the typical results of the product for descriptive purposes. They are not intended for the establishment of product specifications.

This compound can be fully cured for use or test purposes at room temperature after one week. The cure can be accelerated at 60°C in 18 hours, or at 80°C in 6 hours.

Processing Properties

Viscosity (at 25°C, ASTM D-2393)	
Vorite®715-M1	130 cP.
Polycin®934-M4	315 cP.
Specific Gravity (ASTM D-1875)	
Vorite®715-M1	1.008
Polycin®934-M4	0.894
Mix Ratio (Vorite®715-M1/Polycin®934-M4)	
By weight	17/83
By volume	15/85
Mixed Viscosity (at 25°C) ASTM D-2393	300 cP.
Gel Time (at 25°C, 100g) CC-410	17-20 hours

Physical Properties

Hardness (Shore OO) ASTM D-1484	55
Peak Exotherm (100g mass) ASTM D-2471	32°C
Shrinkage on Curing ASTM D-2566	0.5%
Tensile Strength ASTM D-412	25 psi
Elongation ASTM D-412	130%
Tear Strength ASTM D-624	5 pli
Young's Modulus of Elasticity ASTM D-638	33 psi
Compression Modulus ASTM D-695	22 psi
Brittleness Temperature ASTM D-746	< -50°C
Thermal Conductivity ASTM C-177	0.718 Btu•in/hr•ft^2•°F
Thermal Expansion ASTM D-696 modified	5.4 x 10^{-5} cm/cm°C

Electrical Properties

Dielectric Constant (1 KHz) ASTM D-150	3.3
Dissipation Factor (1 KHz) ASTM D-150	0.04
Volume Resistivity (ohm-cm) ASTM D-257	7 x 10^{13}
Insulation Resistance Telcordia MS17000	2 x 10^{13} ohms

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Stability Properties

Moisture Absorption	
168 hrs, 24°F water	0.1%
Hydrolytic Stability (168 hrs, boiling water)	
Weight change	+0.5%
Hardness change (Shore OO)	- 5
Dry Heat Aging (500 hrs, 100°C)	
Weight change	-4.0%
Hardness change (Shore OO)	0
Insulation Resistance	1.2×10^{10} ohms
675 hrs, 35°C/95% RH	
Hydrogen Generation	0.37 µl/g
48 hrs, 176°F (GC/MS)	
Component Flash Point (ASTM D-3828)	
Vorite®715-M1	> 200°C
Polycin®934-M4	> 218°C
Component Pour Point (ASTM D-197)	
Vorite®715-M1	-36°C
Polycin®934-M4	-34°C

Performance Properties

Corrosion of Copper	non-corrosive
Telcordia MS-17000	
Fungus Resistance	0 growth
ASTM G-21	
Volumetric Expansion	0%
Telcordia TR-NWT-000354	
Water Sensitivity (Expansion)	0%
Telcordia TR-NWT-000354	
Polyethylene Stress-Cracking	Passes
Telcordia MS17000	
Polycarbonate Stress-Cracking	Passes
Telcordia TR-NWT-000354	

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For toxicity or regulatory information please consult the Material Safety Data Sheet.