

OptiCLEAR™ Liquid Encapsulant Fill

SF5003

Polysciences, Inc. *OptiCLEAR™* liquid encapsulant is a new generation of low modulus fill material specifically designed to offer efficient light transmission and low cure stress. Polysciences' *OptiCLEAR™* encapsulant is a novel 100% solids, one component, unfilled, liquid encapsulant designed for encapsulation of semiconductor devices requiring high toughness and strong adhesion to various substrates such as metal, ceramic and organic.

Customer Benefits

OptiCLEAR™ liquid encapsulant offers the following distinct advantages over anhydride-based epoxy systems:

- Highly efficient transmission of incident light and very little change after exposure to high heat
- Enhanced stress management through the ability to achieve low modulus
- Efficient material utilization resulting from extended pot life at room temperature
- Contamination free processing due to very low cure volatiles

Uncured (Wet) Properties

Color

"Water" clear

Viscosity @ 25°C RVDV-II+, Spindle 21, 0.5 rpm
15,600 cps

Specific Gravity
~1.07

Pot Life @ 25°C
> 6 months

Storage Life
> 6 months @ 25°C

Process Parameters

Cure Cycle:

2 hours @ 120°C plus 2 hours @ 150°C
Temperature ramp rate should not exceed
10°C per minute

Weight Loss at Cure
TBD

Cured Properties

Glass Transition Temperature (Tg) by DMA
40°C

Coefficient of Thermal Expansion (CTE)
200 ppm/ °C

Modulus (Three Point Bend)
TBD

Shear Strength (3.3 x 3.3 mm die on ceramic substrate)
TBD

Moisture Absorption after 96 hrs 85°C/85% RH
0.9%

Thermal Stability (% weight loss)
0.8% @ 300°C

Extractable Ionic Content (Na, K, Cl)
< 20 ppm

Dielectric Strength v/mil @ 1/16"
TBD

Dielectric Constant @ 1MHz
TBD

Volume Resistivity ohm-cm @ 23°C
TBD

Refractive Index
TBD

Storage and Handling

Shipment

Keep product at room temperature

Safety

Normal safety precautions for epoxy resins should be observed. Refer to MSDS for details.

All values are considered typical based on tests believed to be accurate. Polysciences, Inc. may change the data as appropriate.

Ordering Information

In The U.S. Call: 1-800-523-2575 • 215-343-6484
In The U.S. Fax: 1-800-343-3291 • 215-343-0214

In Europe Call: (49) 6221-756767
In Europe Fax: (49) 6221-764620