

NoSWEEP™ Wire Bond Encapsulant

EW7072

Polysciences, Inc. *NoSWEEP™* Wire Bond Encapsulant is a novel, 100% solids, one component, silica filled liquid encapsulant designed for encapsulation of very narrow diameter, long and ultra fine pitch wire bonds on semiconductor devices. *NoSWEEP™* is dispensed onto the wires immediately after wire bonding, flowing easily between and around the wires without causing sweep or sag and without voids. *NoSWEEP™* is quickly gelled with UV energy to lock the wires in place so the device can be handled and molded with no damage to the wires.

Customer Benefits

NoSWEEP™ Wire Encapsulant offers the following distinct advantages over conventional molding systems:

- Enables implementation of 35 μm pitch roadmap wire bonding
- Allows for the use of longer wires with low cost, high-density substrates and enables simple die shrinks
- Enables cost reduction through the use of thinner diameter gold wire

Uncured (Wet) Properties

Color

Grayish white pearlescent

Filler Content

84%

Viscosity @ 25°C RVDV-II+ Spindle 14, Cup 6R

115 \pm 25 kcps @ 0.5 rpm

Pot Life @ 25°C

>12 hours @ 25°C

Process Parameters

Dispensing

Recommended needle size: 17 gauge

Heat dispense needle to 60°C

Heat substrate to 90-100°C

Recommended Cure Cycle

UVA 1.0 Joules/cm² @ 90°C plus convection

oven 170°C for 2-4 hours*

Alternative Thermal Only Cure Cycle

Convection oven @ 130°C for 2 hours

plus 170°C for 2-4 hours*

*Second cure step can be done simultaneous with post mold cure

Cured Properties

Glass Transition Temperature (T_g) by DMA
>180°C

Coefficient of Thermal Expansion (CTE)

Alpha 1 = 14 ppm/°C

Alpha 2 = 29 ppm/°C

Flexural Modulus (Three Point Bend)

14.0 GPa @ 25°C

Extractable Ionic Content (Na, K, Cl)

<10 ppm

Dielectric Constant @ 1MHz

3.94

Dielectric Strength v/mil @ 1/16"

453

Volume Resistivity ohm-cm @ 23°C

7.11 x 10¹⁴

Thermal Conductivity W/m²K

0.53

Storage and Handling

Shipment

Recommended temperature is -40°C

Storage

Store at -40°C for up to 12 months

Safety

Refer to MSDS for safe handling practices.

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) 6221-765767

In Europe FAX: (49) 6221-764620