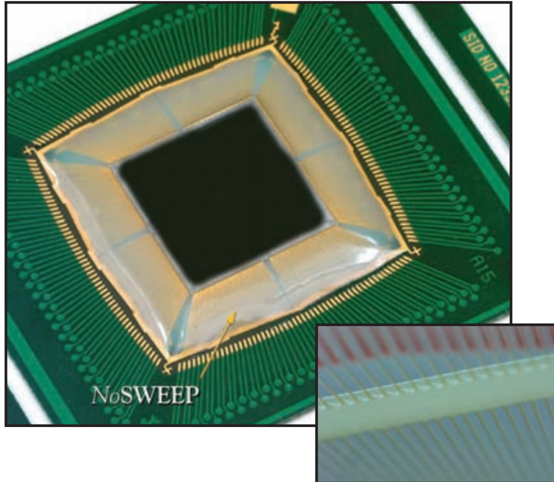
Polysciences, Inc.
Chemistry beyond the ordinary
www.polysciences.com

High Performance / Electronic Materials

*No*SWEEP™
Wire Bond Encapsulant
EW7073



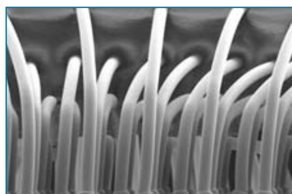
*No*SWEEP™ Wire Bond Encapsulant is a novel, 100% solids, one component, filled liquid designed for encapsulation of semiconductor devices comprising wire bonds with very narrow diameters, long wires and ultra fine pitch.

*No*SWEEP™ is dispensed onto the wires immediately after wire bonding, flowing easily between and around the wires without causing sweep or sag and without voids.

*No*SWEEP™ is quickly gelled with UV energy to lock the wires in place so the device can be handled with no damage to the wires.

Key Benefits
Versus Conventional Molding Systems

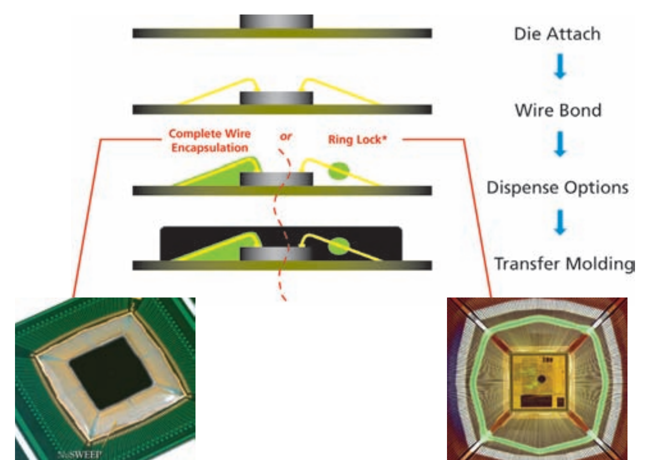
- Enables implementation of sub-35µm pitch roadmap wire bonding.
- Allows for the use of longer wires with low cost, high density substrates and enables simple die shrinks.
- An enabling technology for very complex 3D-stacked die packages.
- Facilitates cost reduction through the use of thinner diameter gold wire.
- *No*SWEEP™ is Lead Free compatible.



*Side view SEM of No*SWEEP™ *Ring-lock* dispense method completely encapsulating a wire section on a quad tier copper wire bonded device.*

*SEM of No*SWEEP™ *Ring-lock* dispense method on the same quad tier copper wire bonded device.*

The *No*SWEEP™ Process*



*Patented Technology

Solving Electronic Assembly & Manufacturing Issues with Unique Chemicals & Polymers

Headquarters | 400 Valley Road, Warrington, PA 18976 | Phone: (800) 523-2575 / (215) 343-6484 | Fax: (800) 343-3291 / (215) 343-0214 | email: info@polysciences.com
Polysciences Europe GmbH | Handelsstr. 3 D-69214 Eppelheim, Germany | Phone: (49) 6221-765767 | Fax: (49) 6221-764620 | email: info@polysciences.de

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Specifications

Uncured (Wet) Properties

Color
  Off-white

Filler Content
  65%

Viscosity @ 25°C RVDV-II+ Spindle 14, Cup 6R
  250 kcps @ 0.5 rpm

Pot Life @ 45°C
  >24 hours

Density
  1.67 gram/cm^3

Process Parameters

Dispensing:
  Heat dispense needle to 60°C
  Heat substrate to 90-100°C

Recommended Cure Cycle:
  UVA 1.0 Joules/cm^2 @ 90°C plus convection
  oven 130°C for 1 hour and 175°C for 3 hours

Cured Properties

Glass Transition Temperature (Tg) by DMA
  174°C

Coefficient of Thermal Expansion (CTE)
  Alpha 1 = 23 ppm/°C
  Alpha 2 = 63 ppm/°C

Flexural Modulus (Three Point Bend)
  9.0 GPa @ 25°C

Extractable Ionic Content (Na, K, Cl)
  < 10 ppm

Dielectric Constant @ 1 MHz
  N/A

Dielectric Strength v/mil @ 1/16"
  N/A

Storage and Handling

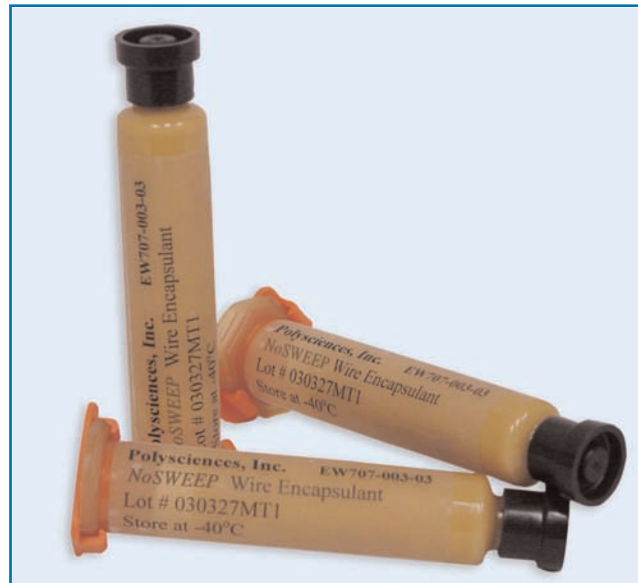
Shipment
  Recommended temperature is room temperature
Storage
  Store < 5°C for up to 6 months
Safety
  Refer to MSDS for safe handling practices.

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



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