



E1926

June 2010

PRODUCT DESCRIPTION

E1926 provides the following product characteristics:

Technology	Epoxy
Appearance	Black
Cure	Heat cure
Product Benefits	• Uniform bondline control • Void-free bondline • Low modulus of elasticity • Low CTE • Low viscosity • Fast flow • Snap curable • JEDEC MSL2A compatibility • Non-anhydride curing chemistry
Application	Underfill
Filler Type	Silica
Typical Assembly Applications	WL-CSP and LGA

E1926 underfill material is designed for fine pitch WL-CSP module application having 35µm gaps or greater and requiring 260°C reflow resistance.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity @ 25 °C, mPa·s (cP):

Speed 20 rpm 6,500

Flow Rate @ 90°C, seconds:

Glass/Glass
 @ 10 mm travel, 50µm gap 22
 @ 22 mm travel, 50µm gap 100

Work Life:

@ 25°C, hours 48
 @ 40°C, hours 8

Shelf Life @ -20°C, months 3

Specific Gravity @ 25°C 1.5

Flash Point - See MSDS

TYPICAL CURING PERFORMANCE

Assembly Preheat Condition

40 to 100°C

Higher temperatures reduce underfill times.

Cure Schedule

20 minutes @ 150°C

Time shown does not include ramp-up time to cure temperature.

Alternate cure schedules may also be possible. Contact your Henkel representative for further information.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Coefficient of Thermal Expansion TMA:

Below Tg, ppm/°C 40

Glass Transition Temperature (Tg) by TMA, °C 125

Tensile Modulus, DMTA :

@ 25 °C N/mm² 2,900
 (psi) (421,000)

Extractable Ionic Content, ppm:

Chloride (Cl-) <30
 Sodium (Na+) <5
 Potassium (K+) <5

TYPICAL PERFORMANCE OF CURED MATERIAL

Reliability Performance:

MSL and thermal shock test performed on an Ni/Au finished FR4 board, 5.96 x 5.96 x 0.6 mm WL-CSP, 0.4 mm pitch daisy chained component. 13 x 13, 4 row, 200µm bump matrix, 96Sn/3Ag/0.5Cu solder type.

Thermal Shock, cycles >1,000
 MSL 3,1 cycle followed by LLTS -40 to 85°C,
 12 minute cycle

Moisture Sensitivity Level (MSL), pcs 24 out of
 MSL 2a, 60°C/60% RH exposure for 120 hours 24 pass

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).



THAWING:

1. Syringes should be positioned tip down when stored vertically.
2. After removing from the freezer, set the syringes to stand vertically while thawing.
3. Syringes should thaw a minimum of 60 minutes.

DIRECTIONS FOR USE

1. E1926 flows under the area array device by capillary action.
2. While it is not essential, the underfill area should be cleaned of contaminants and obstructions to optimize the speed and quality of the underfill
3. Dispense a bead of the underfill using a syringe fitted with the appropriate gauge needle for the application on one (line) or two sides (L-shape) of the device perimeter.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: -20°C. Storage below -20°C or greater than minus -20°C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Note

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Reference 0.2