



ISO-9001-2008 Certified

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TECHNICAL BULLETIN

EPOXIBOND-177 FIBER OPTIC GRADE EPOXY ADHESIVE

EB-177 is a low viscosity, high Tg, two part epoxy that can be used for potting, encapsulating, or bonding. It is used highly in the medical, optical, and semiconductor industries.

EB-177 has excellent high temperature resistance at 300°C and excellent solvent, chemical, and moisture resistance including gamma rays, autoclave, and ETO. It is an excellent choice for semiconductor applications including capillary underfill or flip chip die attach.

USP Class VI Certified for Biocompatibility

TYPICAL HANDLING PROPERTIES:

Epoxibond	Part A
Hardener	Part B
Mix ratio by weight, (Resin/Hardener)	1:1
Mix ratio by volume (Resin/Hardener)	1:1
Mixed Viscosity at 25°C, cp	200-300
Pot Life at 25°C (100 grams), hours	>12
Recommended Cure	2 hr @ 80°C + 2 hr @ 125°C
Alternate Cure	1 hr @ 150°C

TYPICAL CURED PROPERTIES:

Color	Clear Amber
Specific Gravity	1.20
Hardness, Shore D	92
Water Absorption (24 hr @ 25°C), %	0.17
Lap Shear Strength to AL, psi	1500
Linear Shrinkage, %	0.17
Flexural Strength (yield), psi	13,500
Flexural Modulus (yield), psi	3.2×10^5
Service Temperature range, °C	-55 to 250
Glass Transition Temperature, °C	110
Coefficient of Linear Thermal Expansion, $10^{-6}/^{\circ}\text{C}$	
Below Tg	59
Above Tg	>150
Dielectric Strength, Volts/mil	450
Dielectric Constant at 1 kHz	3.36
Dissipation Factor at 1 kHz	0.05
Volume Resistivity, ohm-cm	$>1.0 \times 10^{13}$

OPTICAL PROPERTIES

Refractive Index, 25°C	1.52@ 589nm
Spectral Transmission	
@600nm	>99%
@1000-1500nm	>95%

INSTRUCTIONS FOR USE:

1. Mix 100 grams of Resin (PART-A) to 100 grams of Hardener (PART-B) and mix it well preferably using a mechanical mixer.
2. Vacuum degasses for five minutes to remove dissolved and entrapped air.
3. Proceed with the bonding, casting or potting application and cure as recommended.

FROZEN ADHESIVE:

Thaw premixed frozen adhesive at room temperature for 5-10 minutes. Dispense adhesive and cure at recommended schedules.

AVAILABILITY:

2 parts Kit - Packaged in Pint, Quart, Gallon, and 5-Gal

Premixed and frozen - Packaged in 3cc, 5cc, 10cc and 30cc disposable syringes and ship in dry ice at -80°C

FOR INDUSTRIAL USE ONLY:

Practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

WARNING!

Adequate ventilation of work place and ovens is essential. Refer to Material Safety Data Sheet (**MSDS**) for additional health and safety information.

SHELF LIFE:

One year when stored in unopened containers at an average temperature of 25°C.

DISCLAIMER: All data given here is offered as a guide to the use of these materials and not as a guarantee of their performance. The user should evaluate their suitability for own purposes. Properties are typical and should not be used in preparing specifications. Statements are not to be construed as recommendations to infringe any patent.