



TECHNICAL BULLETIN

EPOXIBOND-109M-11 FLEXIBLE, LOW VISCOSITY OPTICAL GRADE EPOXY ADHESIVE

EB-109M-11 is a flexible, two components, low viscosity, clear epoxy adhesive for optical, medical, and semiconductor applications. This long working life adhesive can be cured at room temperature or with moderate heat and provides excellent adhesion to glass, quartz, metals, wood and most plastics.

Features & Application:

- Potting, casting, encapsulation and bonding applications.
- Excellent impact/vibrations resistance.
- Low stress adhesive for bonding optics inside OEM / scientific instruments
- For LCD optical lamination and sealing of glass plates & for LED encapsulation.
- Semiconductor applications: underfill for flip chips, glob top encapsulation over wire bonds, spin coating at wafer level.
- Fiber optic adhesive; bundling fibers, terminating fiber into ferrule, adhesive for mounting optics inside fiber components

TYPICAL HANDLING PROPERTIES:

Adhesive	EB-109M-11
Hardener	EH-21LP
Mix ratio by weight, (Adhesive/Hardener)	100/30
Mixed Viscosity at 25°C, cp	200-600
Pot Life at 25°C (100 grams), minutes	>4 hrs
Shelf life:	
Two Parts Kit @ 25°C	1-year
Frozen @ -40°C	1-year
Recommended Cure	3 hrs at 65°C
Alternate Cure	24-48 hrs at 25°C

TYPICAL CURED PROPERTIES:

(Tested @ 25°C unless otherwise indicated)

Color	Clear
Specific Gravity	1.16
Hardness, Shore A	40-60
Water Absorption (24 hr @ RT), %	<1
Lap Shear Strength to Aluminum, psi	<1000
Service Temperature range, °C	-55 to 90
Glass Transition Temperature, °C	<30
Coefficient of Linear Thermal Expansion, 10 ⁻⁶ /°C	
From -60°C to 25°C	>100
Dielectric Strength, Volts/mil	420
Dielectric Constant at 1 kHz	3.8
Dissipation Factor at 1 kHz	0.012
Volume Resistivity (ohm-cm)	8x10 ¹⁴

INSTRUCTIONS FOR USE:

1. Weigh each 100 grams of RESIN, EB-109M-11 to 30 grams of Hardener EH-21LP.
2. Mix until uniform. Scrape the sides and bottom of container repeatedly during mixing.
3. Apply to clean bonding surfaces and cure as recommended to achieve the desired properties. Typical cured properties were determined using recommended cure schedule.
4. Some difference in properties may occur with the alternate or other cure schedules.

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-Gallon size.

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. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. Refer to Material Safety Data Sheet (**MSDS**) for additional health and safety information.