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ISO-9001-2015 Certified

TECHNICAL BULLETIN

EPOXIBOND™ EB-153
LOW VISCOSITY, HIGH TEMPERATURE ADHESIVE

EB-153 is unfilled, low viscosity, heat curing, high temperature resistant epoxy adhesive. It maintains high lap shear strength up to 210°C and has excellent thermal and chemical resistance. It can be used for bonding, coating, and sealing applications where a thin film with high insulating resistance is required, particularly at elevated temperatures. It is recommended for bonding metals, glass, and ceramic substrates. It has long pot-life and has an amber color change upon cure.

Features & Applications:

- **Semiconductor:** Wafer to wafer bonding; MEMs devices; flip chip underfill
- **Hybrid:** fiber optic, hermetic seals and high temperature packaging sensors
- **Fiber optic:** Sealing fiber into ferrules, transmitting light in the optical pathway, Fiber component packaging; adhesive for active alignment of optics, environmental seal of opto-package, V-groove arrays
- **Medical:** Potting fiber optic bundles into ferrules for light guides and endoscopes; Capable of resisting several sterilization techniques; **Meets USP Class VI for Biocompatibility Standards**; adhesive for catheter devices
- **Electronics Assembly:** Used as dielectric layer in the fabrication of capacitors; laminating PZT ferroelectrics; Impregnating windings in motors and inductor coils; Bonding ferrite cores and magnets; Structural adhesive for electronic components

TYPICAL HANDLING PROPERTIES:

Color	(Resin, PART-A)	Clear
	(Hardener, PART-B)	Clear Amber
Mix ratio by weight, (Adhesive/Hardener)		100/10
Mixed Viscosity at 25°C, cp		3000-5000
Pot Life (100 grams) at 25°C, hrs		5-6

Cure Schedules: (Bondline Temperature):

1-2 minutes @ 150°C
5-10minutes @ 125°C
10-15 minutes @ 100°C
30-50 minutes @ 80°C

TYPICAL CURED PROPERTIES: (1 hr @ 150°C)

Color		Dark Amber
Specific Gravity		1.18
Hardness, Shore D		87
Refractive Index		1.56
Spectral Transmission	(800-1000 nm)	>98%
	(1100-1600 nm)	>95%
Lap Shear Strength to Aluminum, psi		2600
Die Shear Strength @ 25°C, psi		>5000
Service Temperature range, °C		-55 to 250
Glass Transition Temperature, °C		>115°C
Coefficient of Linear Thermal Expansion, 10^{-6}/°C		
	Below Tg	54
	Above Tg	190
Dielectric Strength, Volts/mil		380
Dielectric Constant at 1 kHz		3.2
Dissipation Factor at 1 kHz		0.006
Volume Resistivity, ohm-cm		$1x10^{15}$

INSTRUCTIONS FOR USE:

1. Weigh each 10 grams of RESIN (PART-A) to 1 gram of Hardener (PART-B).
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.
4. Typical cured properties were determined using recommended cure schedule.

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, and 1-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 workplace and ovens is essential. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. In case of skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 10 minutes and seek medical attention. Refer to Safety Data Sheet **(SDS)** for additional health and safety information.