

# 20-3401 MEDICAL, OPTICAL AND SEMICONDUCTOR GRADE EPOXY RESIN

## DESCRIPTION:

20-3401 is a two component clear epoxy resin system. It provides excellent optical transmission properties along with outstanding adhesion and electrical insulation.

20-3401 is a low viscosity system with an extended working time. It is designed for L.E.D. encapsulating, an underfill for flip chips, glob top encapsulation, fiber optics, and any potting or adhesive application requiring clarity. It has excellent adhesion to glass, quartz, most plastics, and metals.

20-3401 passes the Biocompatibility ISO 10993-5 Cytotoxicity Test. The independent lab test report is available upon request.

20-3401 is REACH and RoHS compliant.

## FEATURES:

- Low viscosity
- Extended working time
- Outstanding electrical properties
- Optically clear
- Packaged in FreezeBond® syringes
- Passes ISO 10993-5 Cytotoxicity and USP <87>

## TYPICAL SPECIFICATIONS:

Color	Clear
Mix ratio	
By weight (Resin: Hardener)	100:35
By volume (Resin: Hardener)	100:41
Mixed viscosity @ 25°C, cps	200-500
Pot Life, 25°C, 100 grams, hrs.	8
Hardness, Shore D	82
Glass Transition Temperature, °C	80
Specific gravity, 25°C	
Resin	1.1
Catalyst	.95
Refractive Index (liquid)	1.534 @ 589 nm
Spectral Transmission (cured)	
@300 nm	≥95%
@400-1,200 nm	≥99%
@1,200-1,600 nm	≥98%

Weight loss	
@200°C	0.01%
@250°C	.46%
Operating temperature range, °C	-45 to +150 (Intermittent <300)

Coefficient of Thermal Expansion, in/in°C	
Below Tg	61 x 10 <sup>-6</sup>
Above Tg	180 x 10 <sup>-6</sup>
Lap Shear Strength, psi	2,250
Dielectric constant @ 1 KHz	3.8
Volume Resistivity (ohm-cm)	1.0 x 10 <sup>13</sup>

### INSTRUCTIONS FOR USE:

By weight thoroughly mix 35 parts hardener to 100 parts 20-3401 epoxy resin. By volume thoroughly mix 41 parts hardener to 100 parts 20-3401 epoxy resin.

#### Cure schedule:

80°C 3 Hours (Recommended)  
25°C 1-2 Days

### STORAGE, HANDLING, AND SHELF LIFE:

Store both components at 75-85°F in original containers. The shelf life when stored under these conditions is 12 months. FreezeBond™ premixed and frozen syringes have a shelf life of six months stored at -40°C. Carefully read Safety Data Sheets (SDS) before using.

### Availability:

20-3401 is available in FreezeBond™ premixed and frozen 5cc, 10cc, 30cc, and 50cc syringes. Also available in bulk packaging; quarts, gallons, 5 gallon pails, and 55 gallon drums.

### IMPORTANT:

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06/23