Polytec PT
Polymere Technologien

Data Sheet Version 3/2011

Polytec EP 653

Polytec EP 653 is a 100% solid, two component, low viscosity, high temperature epoxy. The adhesive is certified to USP Class VI Biocompatibility Standards.

Typical Properties

Number of Components	2
Mix Ratio By Weight	
Part „A“ (resin)	100
Part „B“ (hardener)	10
Pot Life at room temperature	24 Hours
Shelf Life at room temperature	12 Months
Viscosity (84 RPM @ 23°C)	6000 mPa s
Specific Gravity Part „A“ (resin)	1,20 g/cm³
Specific Gravity Part „B“ (hardener)	1,05 g/cm³
Specific Gravity (mixture)	1,10 g/cm³
Consistency	Flowable liquid
Color (Before / Upon cure)	Yellow / Amber
Minimum Bond Line Cure Schedule	
80°C	90 Minutes
120°C	30 Minutes
150°C	5 Minutes
Thermal Properties	
Glass Transition Temperature	105°C
Continuous Operating Temperature	-55°C / 230°C
Intermittent Operating Temperature	-55°C / 300°C
Degradation Temperature	400°C
Coefficient of Thermal Expansion	
Below Tg / Above Tg	40 / 170 [x10^{-6}/K]
Mechanical Properties	
Shore- Hardness	D85
Die Shear Strength	90 N/mm^2
Cation-Anion Analysis	
Chlorine (Cl^-)	< 189 ppm
Ammonium (NH_4)	< 319 ppm
Potassium (K^+) /Fluoride (F^-) / Sodium (Na^+)	< 3 ppm
Electrical Properties	
Volume Resistivity	> 2 * 10^{13} ohm-cm

Polytec EP 653 provides extreme high temperature, chemical, electrical and moisture resistance. It was designed for medical, semiconductor, hybrid, piezo, fiber optics (such as medical endoscopes), HV and UHV applications
It has an excellent adhesion to glass, metal, ceramics, ferrite and most plastics. Recommended as adhesive, impregnation, underfill and encapsulation.
Polytec EP 653 passed > 500 autoclave steam cycles!
It complies to USP Class VI Biocompatibility Standards.

Typical applications:

- Near hermetic sensor and UHV seals
- Impregnating of copper coils
- Laminating PZT ferroelectrics
- Flip Chip Underfill
- Bonding fiber optic bundles (medical endoscopes)
- Dielectric Layer

Features:

- Low Viscosity
- Autoclavable (> 500 autoclave steam cycles)
- Certified to USP Class VI Biocompatibility Standards
- Excellent moisture and chemical resistance
- Color change upon cure

Processing:

- Dispensing
- Jet-Dispensing

Available Pack Sizes:

- See price list
- Pre-mixed- frozen version **Polytec EP 653-frozen**
- Customized Packaging

For more information, see:

- MSDS of Polytec EP 653
- Application notes
- Catalogue

Please note:

The above listed information are typical data based on tests and are believed to be accurate. Polytec PT makes no warranties (expressed or implied) as to their accuracy. The above listed data do not constitute specifications. The processing (in particular the cure conditions) of the material, the process control and the variety of different applications at various customers are not under Polytec PT's control. Therefore Polytec PT will not be liable for concrete results in any specific application or in any connection with the use of this product.
In particular the cure conditions do have a major effect on the properties of the cured material. Therefore it is highly recommended to keep the cure schedule – once established - under tight control.
With the release of this data sheet all former data sheets will be null and void.

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