



# EPO-TEK® MED-320

Technical Data Sheet  
For Reference Only

Biocompatible/Opaque Epoxy  
ISO 10993-5 Tested/Compliant

**Date:** September 2018  
**Rev:** IV  
**No. of Components:** Two  
**Mix Ratio by Weight:** 10 : 2  
**Specific Gravity:** Part A: 1.10      Part B: 0.87  
**Pot Life:** 1 Hour  
**Shelf Life- Bulk:** One year at room temperature

**Biocompatible Certified Cure: 65°C / 1 Hour**

*Alternative biocompatible cure schedules may be possible, but have not been certified. Contact [med@epotek.com](mailto:med@epotek.com) with any questions.*

**NOTES:**

- Container(s) should be kept closed when not in use.
- Filled systems should be stirred thoroughly before mixing and prior to use.
- Performance properties (rheology, conductivity, others) of the product may vary from those stated on the data sheet when bi-pak/syringe packaging or post-processing of any kind is performed. Epoxy's warranties shall not apply to any products that have been reprocessed or repackaged from Epoxy's delivered status/container into any other containers of any kind, including but not limited to syringes, bi-paks, cartridges, pouches, tubes, capsules, films or other packages.
- Syringe packaging will impact initial viscosity and effective pot life, potentially beyond stated parameters.
- **TOTAL MASS SHOULD NOT EXCEED 25 GRAMS**

**Product Description:** EPO-TEK® MED-320 is a black, biocompatible, thixotropic, low temperature curing, optically opaque epoxy for fiber optics, camera and photonic packaging, often used in bonding/potting/sealing of optics used in various medical imaging electronics.

**Typical Properties:** Cure condition: 65°C / 1 Hour      Different batches, conditions & applications yield differing results.

Data below is not guaranteed. To be used as a guide only, not as a specification. \* denotes test on lot acceptance basis

PHYSICAL PROPERTIES:			
* Color (before cure):	Part A: Black	Part B: Clear/Colorless	
* Consistency:	Slightly thixotropic paste		
* Viscosity (23°C) @ 100 rpm:	700 - 1,200	cPs	
Thixotropic Index:	5.8		
* Glass Transition Temp:	≥ 55 °C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)		
Coefficient of Thermal Expansion (CTE):			
Below Tg:	57	x 10 <sup>-6</sup> in/in°C	
Above Tg:	149	x 10 <sup>-6</sup> in/in°C	
Shore D Hardness:	80		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 15	Kg	5,334 psi
Degradation Temp:	339 °C		
Weight Loss:			
@ 200°C:	0.70	%	
@ 250°C:	1.27	%	
@ 300°C:	3.06	%	
Suggested Operating Temperature:	< 275 °C (Intermittent)		
Storage Modulus:	467,328	psi	
* Particle Size:	< 20 microns		

OPTICAL PROPERTIES @ 23°C:		
Spectral Transmission:	<1% @ 300-2500	nm
Refractive Index:	N/A	

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This information is based on data and tests believed to be accurate. Epoxy Technology, Inc. makes no warranties (expressed or implied) as to its accuracy and assumes no liability in connection with any use of this product.

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## Fiber and Electro-Optics

- Opaque, light blocking adhesive (UV/VIS/IR) with fiber optic lighting, camera and video circuits and cabling
- Widely used epoxy at the distal tip of endoscopes, potting and sealing LEDs, lens, CMOS camera chips, irrigational canals, and cup shaped metals and plastics parts
- A general purpose adhesive for endoscope aftermarket repairs and services, as well as light guides and headlights
- Low or room temperature curing epoxy resin chemistry is ideal for disposable applications including plastic optical fibers, catheter tubing, thermoplastics and elastomers
- Slightly electrically conductive epoxy enables shielding of EMI/IR radiation from polluting the VIS light optics
- Enabling surgical lasers and endoscopes, MED-320 received an “excellent compatibility rating” with Sterrad® (no damage 100 cycles) sterilization process

## Device, Diagnostics and Wearables

- IR opaque adhesive for thermography and blood gas analysis in patient monitoring
- Suggested adhesive for wearable electronics including skin patch diabetic monitoring, via plastic optical waveguides, and fitness style activity watches

## Biocompatibility Approvals

- EPO-TEK® MED-320 cured at 65° for 1 hour has been tested and is ISO 10993-5 certified (Cytotoxicity testing by MEM Elution methodology).

## Sterilization Information

- Epoxy performance is most influenced by surface preparation and cleanliness, overall process and handling, and finally proper curing selection. While bulk samples of MED-320 may resist sterilization technologies such as autoclave steam, gaseous technologies, gamma radiation and liquid disinfectants, the glue joints may differ. All users need to determine the suitability of MED-320 for their given application.
- MED-320 can resist a few cycles of autoclave, ETO and gamma sterilization.
- A report from Advanced Sterilization Products®, a division of Ethicon US, LLC, a Johnson & Johnson Company, suggests MED-320 is compatible with 500 cycles of Sterrad® with no leakage:  
See Technical Paper # 59: Compatibility of Medical Devices and Materials with Low Temperature Hydrogen Peroxide Gas Plasma for more information:  
<http://www.epotek.com/site/technical-material/technical-material.html#59>

## Packaging Availability

- EPO-TEK® MED-320 is available in specialty packaging such as Bi-Paks, or bulk (A & B containers).
- A Bi-Pak video tutorial can be found here:  
<http://www.epotek.com/site/technical-material/application-video-tutorials/117-effective-handling-and-mixing-of-epo-tek®-bi-packs.html>



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