



EPO-TEK® MED-375
Technical Data Sheet
For Reference Only
Biocompatible/High Temperature, Optical Epoxy
ISO 10993-5 Tested/Compliant

Date: January 2020
Rev: VII
No. of Components: Two
Mix Ratio by Weight: 10 : 1
Specific Gravity: Part A: 1.21 Part B: 1.01
Pot Life: 4 Hours
Shelf Life- Bulk: One year at room temperature
Shelf Life- Syringe: One year at -40°C

Biocompatible Certified Cure: 150°C / 1 Hour

Alternative biocompatible cure schedules may be possible, but have not been certified. Contact 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.

Product Description: EPO-TEK® MED-375 is a biocompatible, high Tg, high temperature epoxy. It has a color change upon cure and can provide near hermetic sealing. Additionally, it has excellent adhesion to many surfaces including: SST, titanium, ceramic, glass and most plastics. In designs, often used in potting fibers and active alignment of optics, as well as laminating PZT ferroelectrics in ultrasound applications.

Typical Properties: Cure condition: 150°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: Clear/Colorless	Part B: Amber	
* Consistency:	Pourable liquid		
* Viscosity (23°C) @ 50 rpm:	3,000-5,000	cPs	
Thixotropic Index:	N/A		
* Glass Transition Temp:	≥ 100	°C	(Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):			
	Below Tg:	58	x 10 ⁻⁶ in/in°C
	Above Tg:	162	x 10 ⁻⁶ in/in°C
Shore D Hardness:	85		
Lap Shear @ 23°C:	> 2,000	psi	
Die Shear @ 23°C:	≥ 15	Kg	5,334 psi
Degradation Temp:	427	°C	
Weight Loss:			
	@ 200°C:	0.42	%
	@ 250°C:	0.58	%
	@ 300°C:	0.93	%
Suggested Operating Temperature:	< 375	°C	(Intermittent)
Storage Modulus:	343,872	psi	
Particle Size:	N/A		

OPTICAL PROPERTIES:		
Spectral Transmission:	≥ 97% @ 800-1620	nm
Refractive Index:	1.5636 @589	nm

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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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Selected Applications for EPO-TEK® MED-375

Fiber and Electro-Optics

- Impregnating and terminating fiber optic image bundles and light guides, adhesive for flexible endoscopes, adhesion to plastic and glass optical fibers, structural and near hermetic sealing of glass, ceramic and metals
- Manufacture of all kinds of endoscopes, such as, laryngoscopes, gastroscopes, broncho-scopes and micro ophthalmoscopes; healthcare optics for colonoscopy, urology, and otolaryngology
- Fiber optic adhesive for surgical lighting and optics including loupes and endoscopic aftermarket repair adhesive
- Fiber optic catheter lasers for Photo Dynamic Therapy (PDT) in tumor removal treatments

Imaging Technologies

- Endoscopy with camera and video interface
- Ultrasound imaging

Ultrasound / Ultrasonic

- Adhesive for catheter delivered surgical mapping. 3D imaging and mapping catheters; catheter ultrasound for cardiac therapy, such as AFib treatments
- Front-end ultrasound fabrication adhesive responsible for PZT arrays
- Back-end PZT processes enabling transducers, ultrasound probe repair adhesive
- Repair adhesive for ultrasound probes

Life Sciences and MicroFluidics

- DNA and gene sequencers, readers and amplification circuits
- Water purity, testing, monitoring and flow- delivery systems

Device and Diagnostics

- Sensor integration and subcomponents for respiratory, anesthesia, vapor and suction; gas and liquid flow monitoring
- Irrigation and pharmaceutical delivery via ultrasonic nebulizers
- SpO2 patient monitoring; capnography, gas analyzers and flow meters
- Adhesive for anesthesia and gas analyzers, and flow meters

Implantable Devices

- Hearing aids and implants; acoustic circuits and structural assembly

Surgical Tools

- High power laser optics for general, reconstructive and cosmetic surgery
- Dental device adhesive, whether lighting or hand instrument, withstanding hundreds of autoclave sterilizations
- Fabrication of Rf Ablation catheters
- Electro-surgical tool for tissue removal; adhesion to ceramic, SST and plastics
- Single use microwave ablation probes for tumor removal
- Impregnating coil motors in orthopedic bone saws
- General catheter delivery and extraction tools
- Fiber Optic laser enabled biopsies

Biocompatibility Approvals

- EPO-TEK® MED-375 cured at 150°C 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-375 may resist sterilization technologies such as autoclave steam, gaseous technologies, gamma radiation as well as liquid disinfectants, the glue joints may differ. All users need to determine the suitability of MED-375 for their given application.
- MED-375 was found compatible with 200 cycles of Sterrad® sterilization cycles at standard concentration.
- MED-375 is generally regarded for resisting few cycles of ETO and gamma radiation.
See Technical Tip # 29: Gamma Sterilization for Medical Devices and its Effect on Epoxies for more information:
http://www.epotek.com/site/files/Techtips/pdfs/techtips_29.pdf

Packaging Availability

- EPO-TEK® MED-375 is available in specialty packaging such as Pre-Mixed Frozen Syringes (PMF), 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>
- A video tutorial on handling frozen syringes can be found here:
<http://www.epotek.com/site/technical-material/application-video-tutorials/231-proper-receiving-and-thawing.html>



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