EPO-TEK® MED-354-2

Technical Data Sheet
For Reference Only

Biocompatible/High Temperature, Optical Epoxy

ISO 10993-5 Tested/Compliant

Date:	June 2025	
Rev:	I	
No. of Components:	Two	
Mix Ratio by Weight:	10 : 1	
Specific Gravity:	Part A: 1.20	Part B: 1.18
Pot Life:	3 Days	
Shelf Life- Bulk:	One year at room temperature	

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.

Product Description: EPO-TEK® MED-354 is a biocompatible, high Tg, medium viscosity epoxy with a very long (3 day) pot life used in many medical applications, especially fiber optic endoscopy. It has excellent adhesion to quartz, Au, kovar, SST and most plastics and like EPO-TEK® MED-353ND has a color change upon cure, and excellent autoclave resistance.

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
Information is Preliminary While Specifications Are Being Developed.

PHYSICAL PROPERTIES:			
Color (before cure):	Part A: Clear/Colorless		Part B: Dark amber
Consistency:	Pourable liquid		
Viscosity (23°C) @ 50 rpm:		7,415	cPs
Thixotropic Index:		N/A	
Glass Transition Temp:		123	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):			
Below Tg:		80.8	x 10^{-6} in/in°C
Above Tg:		297.4	x 10^{-6} in/in°C
Shore D Hardness:		83	
Die Shear @ 23°C:			Kg psi
Degradation Temp:		430	°C
Weight Loss:			
@ 200°C:		0.05	%
@ 250°C:		0.10	%
@ 300°C:		0.20	%
Suggested Operating Temperature:		< 300	°C (Intermittent)
Storage Modulus:		259,763	psi
Particle Size:		N/A	

OPTICAL PROPERTIES:		
Spectral Transmission:	≥ 95% @ 600-2100	nm
Refractive Index:	1.5759 @589	nm

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Selected Applications for EPO-TEK® MED-354-2

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Fiber and Electro-Optics

- 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 enabled OCT imaging delivered via catheter
- Fiber optic adhesive for surgical lighting and optics including loupes and endoscopic aftermarket repair adhesive

Ultrasound / Ultrasonic

- Adhesive for catheter delivered surgical mapping. 3D imaging and mapping catheters; catheter ultrasound for cardiac therapy, such as AFib treatments
- Screen printable epoxy for back-end PZT processes enabling transducers, with adhesion to thin metal foils
- Repair adhesive for ultrasound probe

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
- Adhesive for anesthesia and gas analyzers and flow meters

Surgical Tools

- High power laser optics for general, reconstructive and cosmetic surgery
- 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
- General catheter delivery and extraction tools
- Fiber Optic laser enabled biopsies

Biocompatibility Approvals

- EPO-TEK® MED-354-2 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-354-2 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-354+0 for their given application.
- MED-354+0 was found compatible with 200 cycles of Sterrad® sterilization cycles at standard concentration.
- MED-354+0 is generally regarded for resisting few cycles of ETO and gamma radiation.
- Gamma Radiation/ion beam will discolor MED-354-2, thus altering its appearance.
  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-354-2 is available in specialty packaging such as Pre-Mixed Frozen (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

Medical Grade EPOXY TECHNOLOGY EPO-TEK®

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