EPO-TEK® MED-T7110

Technical Data Sheet
For Reference Only
Biocompatible/Thermally Conductive Epoxy
ISO 10993-5 Tested/Compliant

Date:	April 2020	
Rev:	VI	
No. of Components:	Two	
Mix Ratio by Weight:	10 : 1	
Specific Gravity:	Part A: 2.29	Part B: 0.91
Pot Life:	3 Hours	
Shelf Life- Bulk:	One year at room temperature	

Biocompatible Certified Cure: 60°C / 4 Hours

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-T7110 is a thermally conductive, electrically insulating, low temperature curing epoxy; ideal for temperature sensitive devices. It is often used encapsulating copper coils in various medical imaging systems (X-ray, Nuclear and MRI).

Typical Properties: Cure condition: 60°C / 4 Hours 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: Grey	Part B: Clear/Colorless
* Consistency:	Pourable paste	
* Viscosity (23°C) @ 100 rpm:	1,400-2,200	cPs
Thixotropic Index:	2.1	
* Glass Transition Temp:	≥ 40	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	32	x 10^{-6} in/in°C
Above Tg:	112	x 10^{-6} in/in°C
Shore D Hardness:	81	
Lap Shear @ 23°C:	> 2,000	psi
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	372	°C
Weight Loss:		
@ 200°C:	0.19	%
@ 250°C:	0.39	%
@ 300°C:	1.24	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	592,942	psi
* Particle Size:	≤ 50	microns

ELECTRICAL AND THERMAL PROPERTIES:		
Thermal Conductivity:	1.3	W/mK

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Selected Applications for EPO-TEK® MED-T7110

epotek.com

Fiber and Electro-Optics

- Heat sinking fiber and laser optics – adhesion to SST, Cu, Al and brass
- General, all-purpose fiber optic repair adhesive

Imaging Technologies

- Adhesive between Si substrate bench and PCB, for photo-diode arrays in xray detection circuits

Ultrasound/Ultrasonic

- General all-purpose ultrasound potting and probe repair adhesive

Life Sciences and MicroFluidics

- General adhesive for bio and molecular diagnostic markets

Device and Diagnostics

- Potting of glucometer pumps whether implantable or external
- Potting, over-coating and weather for activity trackers (wearable devices including fitness watches)

Surgical Tools

- Potting PCBs into metals shafts of hand held surgical instruments
- Laser optics, surgical tools

Biocompatibility Approvals

- EPO-TEK® MED-T7110 cured at 60°C for 4 hours 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-T7110 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-T7110 for their given application.
- MED-T7110 is generally regarded for resisting few cycles of ETO, gamma radiation and autoclave sterilization cycles.
- Gamma Radiation/ion beam may discolor MED-T7110, 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-T7110 is available in specialty packaging such as Pre-Mixed Frozen Syringe (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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