EPO-TEK® MED-301-2FL

Technical Data Sheet
For Reference Only
Biocompatible/Low Stress, Optical Epoxy
ISO 10993-5 Tested/Compliant

Date:	October 2018	
Rev:	IV	
No. of Components:	Two	
Mix Ratio by Weight:	100 : 35	
Specific Gravity:	Part A: 1.05	Part B: 0.91
Pot Life:	< 8 Hours	
Shelf Life- Bulk:	One year at room temperature	

Recommended 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.
- If product crystallizes in storage, place container in warm oven until crystallization disappears. Please refer to Tech Tip #7 on website.

Product Description: EPO-TEK® MED-301-2FL is a biocompatible, low temperature curing, low stress and more flexible version of MED-301-2. It is used in fiber optic applications as well as potting, casting and laminating; with excellent adhesion to glass, quartz, metals and most plastics.

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: Clear/Colorless	Part B: Clear/Colorless
* Consistency:	Pourable liquid	
* Viscosity (23°C) @ 100 rpm:	100 - 200	cPs
Thixotropic Index:	N/A	
* Glass Transition Temp:	≥ 45	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	65	x 10^{-6} in/in°C
Above Tg:	195	x 10^{-6} in/in°C
Shore D Hardness:	55	
Lap Shear @ 23°C:	> 2,000	psi
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	349	°C
Weight Loss:		
@ 200°C:	0.16	%
@ 250°C:	0.29	%
@ 300°C:	0.97	%
Suggested Operating Temperature:	< 300	°C (Intermittent)
Storage Modulus:	414,276	psi
* Particle Size:	N/A	

OPTICAL PROPERTIES:		
Spectral Transmission:	≥ 98% @ 360-2080	nm
Refractive Index:	1.5110 @589	nm

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Selected Applications for EPO-TEK® MED-301-2FL

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Fiber and Electro-Optics

- Impregnating fiber optic image bundles and light guides; adhesive for flexible endoscopes; adhesion to Vyton® rubber and plastic optical fibers
- Transmission of VIS and NIR light signals in camera/video electro optics.
- 3D Dentistry camera and imaging tools
- Fiber optic enables imaging delivered via catheter
- General, all-purpose fiber optic assembly and repair adhesive

Radiation and Imaging

- Adhesive for scintillator crystal array fabrication
- Opto-underfills between scintillator and photodiode array, for medical/dental imaging equipment
- Adhesive carrier and potting resin of radioactive isoptopes, calibration standards of PET and gamma camera equipment
- Sealing, gasketing and laminating LCD plates in chest mammography flat panels

Ultrasound/Ultrasonic

- Adhesive for catheter delivered surgical mapping and imaging catheters
- Final assembly of fetal ultrasound wand and ultrasonic therapies for sports medicine and hypertension relief of kidney disorders
- General all-purpose ultrasound probe repair adhesive

Life Sciences and MicroFluidics

- Adhesive for active optical alignment in spectrophotometry, fluoroscopy and microscopy
- General adhesive for bio and molecular diagnostic markets
- Potting hollow fibers for macro/micro water and biofiltration membranes
- Water purity testing and characterization
- Adhesive for IVF microscopes

Device and Diagnostics

- Potting resin over LD and PD chips in pulsed oximetry
- Adhesive for anesthesia, gas analyzers and flow meters
- Fabrication of glucose sensors; implantable or external
- Patient monitoring electrodes and cables including: ECG and temperature probes

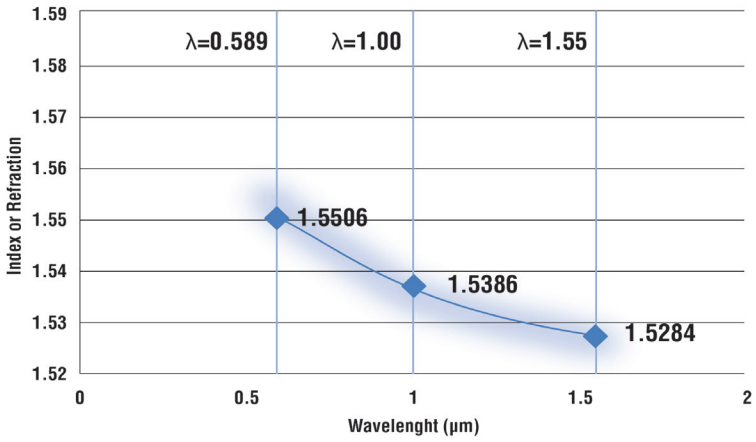
Implantable Devices

- Potting Cu coils and motors used in LVAD and BiVAD blood pumps
- Adhesive for ophthalmic implants; septum bonding and final assembly for diabetic implants; gluing bio-polymers used for IOP drainage; smart drug delivery of pharmaceuticals
- Adhesive for composite plastics enabling ENT and ophthalmic prosthesis
- Adhering PEEK and biomaterials in pancreatic implants for diabetes management

Surgical Tools

- Oncology tools enabled by radiosurgery and radiotherapeutic technologies
- Potting PCBs into metals shafts of hand held orthopedic instruments
- Laser optics (surgical tool for optometry)
- Adhesive for neurovascular surgical probes, electrodes and delivery systems
- Fabrication of Rf Ablation catheters with structural bonding to PEEBAX®

Index of Refraction vs. Wavelength EPO-TEK® MED-301-2FL



Medical Grade EPOXY TECHNOLOGY EPO-TEK®

EPOXY TECHNOLOGY

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Biocompatibility Approvals

- EPO-TEK® MED-301-2FL 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-301-2FL 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-301-2FL for their given application.
- Gamma Radiation/ion beam will discolor MED-301-2FL, 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
- MED-301-2FL is generally regarded for resisting few cycles of ETO and gamma radiation.

Packaging Availability

- EPO-TEK® MED-301-2FL is available in specialty packaging such as Pre-Mixed Frozen Syringes (PMF), or bulk (A & B containers).
- 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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