EPO-TEK® MED-OG116-31

Technical Data Sheet
For Reference Only
Biocompatible/UV Curing Epoxy

ISO 10993 Tested/Fully Compliant

Date:	July 2024
Rev:	X
No. of Components:	Single
Mix Ratio by Weight:	N/A
Specific Gravity:	1.21
Pot Life:	N/A
Shelf Life- Bulk:	One year at room temperature
Shelf Life- Syringe:	One year at room temperature

Biocompatible Certified Cure:
UV 100mW/cm2 320-500nm/2 Minutes + 80°C/2 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 reprocessd 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.
- Thermal post-cure beneficial – contact techserv@epotek.com for recommendations.

Product Description: EPO-TEK® MED-OG116-31 is a biocompatible, one component, thixotropic, high Tg, cationic/epoxy UV curing adhesive. With thermal post curing, this UV has very high chemical resistance and is used in many types of implantable medical devices, specialized surgical and dental tools, as well as fiber optic lasers and catheters.

Typical Properties: Cure condition: UV 100mW/cm2 320-500nm/2 Minutes + 80°C/2 Hours Data below is not guaranteed. Different batches, conditions & applications yield differing results. To be used as a guide only, not as a specification.
* denotes test on lot acceptance basis

PHYSICAL PROPERTIES:		
* Color (before cure):	Cloudy white	
* Consistency:	Viscous liquid	
* Viscosity (23°C) @ 10 rpm:	20,000-30,000	cPs
Thixotropic Index:	1.3	
Glass Transition Temp:	137	°C (Dynamic Cure: 20-200°C/ISO 25 Min; Ramp -10-200°C @20°C/Min)
Coefficient of Thermal Expansion (CTE):		
Below Tg:	59	x 10^{-6} in/in°C
Above Tg:	149	x 10^{-6} in/in°C
Shore D Hardness:	85	
Lap Shear @ 23°C:	N/A	
Die Shear @ 23°C:	≥ 10	Kg 3,556 psi
Degradation Temp:	417	°C
Weight Loss:		
@ 200°C:	0.32	%
@ 250°C:	0.65	%
@ 300°C:	1.17	%
Suggested Operating Temperature:	< 350	°C (Intermittent)
Storage Modulus:	532,845	psi
* Particle Size:	≤ 20	microns

OPTICAL PROPERTIES:		
Spectral Transmission:	> 95% @540-1640	nm
Refractive Index:	1.57 @589	nm

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A Meridian Adhesives Group Company

Selected Applications for EPO-TEK® MED-OG116-31

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Fiber and Electro-Optics

- Cardiac and ophthalmic imaging based on NIR light using OCT technology, bonding of the active optical components and diodes
- Gasket sealing TCO/glass for radiographic display panels whether dental or women's health imaging concerned
- Adhesive for fiber optic enabled guide wires
- Fiberoptic light guided delivering of lasers for cosmetic and skin treatment; lasers for removal of tumors and tissues
- Camera optic fabrication delivered via catheters using radiology and fluoroscopy technology
- Lens bonding applications in endoscopic, camera and video imaging devices

Life Sciences and MicroFluidics

- Adhesive used in macro style bio-processors and mixers; structural bonding and sealing of thermoplastics and metals
- Adhesive with microfluidic technologies enabling bench top diagnostics of cell cultures, using cell sorting mechatronics; drug discovery, infectious disease and bio-pharma end uses

Device and Diagnostics

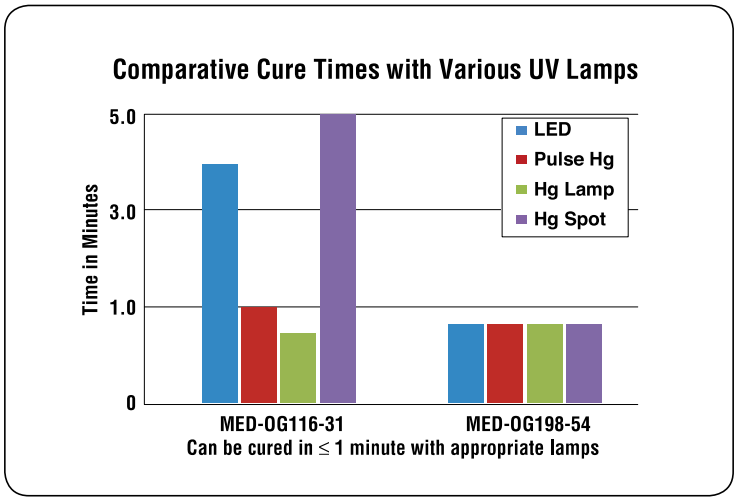
- Sensor integration and subcomponents for respiratory, anesthesia, vapor and suction; gas and liquid flow monitoring
- Irrigation and pharmaceutical delivery via ultrasonic nebulizers
- SpO2 patient monitoring; capnography, gas analyzers and flow meters
- Adhesive for anesthesia, and gas analyzers and flow meters
- Bonding and structural sealing of thin layer MEMs micro-etched Si membranes yielding micro-droplets from hand held inhalers; pharmaceutical delivery and respiratory aids

Implantable Devices

- A glob top over ICs and SMDs with cochlear style implants using miniature electronics
- Microelectronic assembly for implantable packages enabling Deep Brain Stimulation (DBS)
- Moisture protection and structural reinforcement of implantable micro-circuits for obstructive sleep apnea
- Adhesive, seal, encapsulant and potting material for many implantable microelectronic packages such as cochlear, neurostimulators and ophthalmic devices

Surgical Tools

- Adhesive for catheter delivery devices yielding surgical navigation and cardiac mapping
- Electro-surgical devices based on Rf Ablation, whether hand held or catheter equipped
- Vitreo-Retinal viewing resulting from ophthalmic surgical tools
- Glob top adhesive over IC and antenna coil, for RFIDs tracking endoscopes and surgical devices throughout their life cycles of use and sterilization in hospitals



Medical Grade EPOXY TECHNOLOGY EPO-TEK®

EPOXY TECHNOLOGY

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Biocompatibility Approvals

- EPO-TEK® MED-OG116-31 is cured with UV for 2 minutes plus 80°C for 2 hours is ISO 10993 certified, meeting Hemolysis (10993-4), Cytotoxicity (10993-5), Implantation (10993-6), Intracutaneous (10993-10), Sensitization (10993-10) and Systemic Toxicity (10993-11) test protocols

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-OG116-31 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-OF116-31 for their given application.
- MED-OG116-31 is generally regarded for resisting few ETO sterilization cycles.
- MED-OG116-31 is Sterrad® 100NX resistant, anecdotally reported. Gamma radiation/ion beam will discolor MED-OG116-31 thus altering its UV-VIS transmission.
  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

- MED-OG116-31 is available in specialty packaging, which are black syringes that can be stored at room temperature.

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