EPO-TEK® OG142-87

Technical Data Sheet

For Reference Only

UV Cure Optical Epoxy

Date: August 2022 **Rev:** XII

No. of Components: Single

Mix Ratio by Weight: N/A

Specific Gravity: 1.17

Pot Life: N/A

Shelf Life: One year refrigerated

Recommended Cure	
Iron-Doped Mercury Flood Lamp *100 mW/cm² @ 240-365 nm*	**> 30 sec.**
Alternative Cures*	
Iron-Doped Mercury Spot Lamp	> 90 sec.
365nm LED Flood Lamp	> 90 sec.
Pulsed Mercury Lamp	> 60 sec.

UV Cure is complete after 24 hours from UV Exposure

* Contact Technical Services for application-specific variations

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 Products 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..
- Thermal post-cure beneficial - contact techserv@epotek.com for recommendations.

Product Description: EPO-TEK® OG142-87 is a single component, low viscosity, UV curable epoxy for adhesive sealing and encapsulating fiber optic and optoelectronic packaging application. It is a replacement version of EPO-TEK® OG142-13 with better bonding strength and moisture resistance.

Typical Properties: *Cure condition: varies as required *denotes test on lot acceptance basis Data below is not guaranteed. To be used as a guide only, not as a specification. Different batches, conditions & applications yield differing results.*

PHYSICAL PROPERTIES:

* **Color (before cure):**		Clear/Colorless		
* **Consistency:**		Pourable liquid		
* **Viscosity (23°C) @ 100 rpm:**		250 - 600	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:	50	x 10^{-6} in/in°C	
	Above Tg:	162	x 10^{-6} in/in°C	
Shore D Hardness:		82		
Lap Shear @ 23°C:		N/A		
Die Shear:				
UV Cure:		≥ 25	Kg	8,890 psi
UV Cure + 23°C/24 Hours		25.1	Kg	8,925.6 psi
UV Cure + 80°C/1 Hour		25.1	Kg	8,925.6 psi
Degradation Temp:		384	°C	
Weight Loss:	**@ 200°C**	0.32	**%**	
	@ 250°C	0.64	**%**	
	@ 300°C	1.58	**%**	
Suggested Operating Temperature:		< 300	°C	(Intermittent)
Storage Modulus:		520,650	psi	
* **Particle Size:**		N/A		

OPTICAL PROPERTIES @ 23°C:

Spectral Transmission:	≥ 97% @ 580-1,660	nm
Refractive Index (uncured):	1.4925 @ 589	nm
Refractive Index (cured):	1.5058 @ 589	nm

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EPO-TEK® OG142-87 Advantages & Suggested Application Notes:

- Semiconductor: fill for UV dam and fill encapsulation over ICs and wire bonds. Commonly potted into cavities, epoxy dams, or plastic rings
- Fiber Optic: secure fibers into V-grooves; mounting glass cover over fiber arrays
  - Adheres glass and plastic lens for fiber/lens arrays
  - Fiber splicing, coupling, and joining. Maintains consistent alignment in active optical pathways
- Optics: adheres glass, Lexan, polycarbonate, and many other plastics
- Adhesive in the active beam path capable of transmitting light in the 400-2000 nm range
- Bonds beam splitter cubes and prisms

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