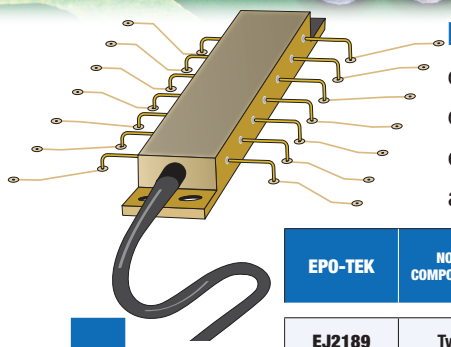
Photonic/Fiber Optic Epoxy Applications



Photonic/Fiber Optic epoxy adhesives are commonly used for adhering various substrates and providing protective coatings in several fiber optic applications. **EPO-TEK®** materials are frequently found in **bundling optical fibers**, as well as **bonding components** in optoelectronic devices for telecommunication, aircraft, satellites, and scientific instrumentation. They provide optical transparency, thermal management, electrical conductivity and structural integrity, while resisting several types of sterilization, as well as passing 85%RH/85°C and Telcordia testing. In addition, several products have passed USP Class VI Bio-Compatibility Testing for use in medical devices such as endoscopes and pacemakers.

	EPO-TEK	NO. of COMPONENTS	COLOR Before/ After CURE (thin film)	CURE TEMPERATURE (minimal)	VISCOSITY @ 23°C	GLASS TRANSITION TEMPERATURE (Tg)	DIE SHEAR STRENGTH @ RT (80mil x 80mil)	INDEX OF REFRACTION (Nd)	SPECTRAL TRANSMISSION	TGA DEGRADATION TEMPERATURE	CTE Below Tg/ Above Tg (in/in/°C)	POT LIFE (@ room temp.)	SHELF LIFE (@ room temp.)
EPOXY	EJ2189	Two	Silver/Silver	150°C – 15 min 23°C – 3 days	55,000-90,000 cPs @ 1 rpm	≥30°C	≥9 kg/3,060 psi	N/A	N/A	316°C	53 x 10^{-6} 107 x 10^{-6}	4 hours	1 year
	EK1000	One	Silver/Silver	200°C – 30 min 150°C – 1 hour + 200°C – 1 hour (post-cure)	1,800-3,600 cPs @ 100 rpm	≥80°C	10 kg/3,400 psi	N/A	N/A	357°C	38 x 10^{-6} 94 x 10^{-6}	2 weeks	1 year @ -40°C
OPTICAL PHOTO DIODE	H20E	Two	Silver/Silver	175° – 45 sec 80°C – 3 hours	2,200-3,200 cPs @ 100 rpm	≥80°C	>5 kg/1,700 psi	N/A	N/A	425°C	31 x 10^{-6} 158 x 10^{-6}	2.5 days	1 year
	H37-MP	One	Silver/Silver	150°C – 1 hour	22,000-26,000 cPs @ 10 rm	≥90°C	≥10 kg/3,400 psi	N/A	N/A	358°C	52 x 10^{-6} 148 x 10^{-6}	28 days	1 year @ -40°C
	930-4	Two	Ivory/Amber	150°C – 10 min 80°C – 6 hours	12,000-17,000 cPs @ 20 rpm	≥90°C	≥15 kg/5,100 psi	N/A	N/A	425°C	27 x 10^{-6} 136 x 10^{-6}	24 hours	1 year
DIE ATTACH	T7109	Two	White/White	150°C – 10 min 80°C – 8 hours	14,000-20,000 cPs @ 20 rpm	≥45°C	≥15 kg/5,100 psi	N/A	N/A	377°C	46 x 10^{-6} 239 x 10^{-6}	4 hours	1 year
	T7109-19	Two	Grey/Grey	80°C – 2 hours 23°C – 24 hours	44,738 cPs @ 5 rpm	27°C	8.3 kg/2,822 psi	N/A	N/A	338°C	59 x 10^{-6} 216 x 10^{-6}	1.5 hours	1 year
	301	Two	Clear/ Colorless	65°C – 1 hour 23°C – 24 hours	100-200 cPs @ 100 rpm	>65°C	>10 kg/3,400 psi	1.5190	>98% @ 400-700 nm >97% @ 700-2500 nm	430°C	39 x 10^{-6} 98 x 10^{-6}	1-2 hours	1 year
	301-2	Two	Clear/ Colorless	80°C – 3 hours 23°C – 2 days	225-425 cPs @ 100 rpm	>80°C	>15 kg/5,100 psi	1.5318	>99% @ 400-1200 nm >98% @ 1200-1600 nm	360°C	61 x 10^{-6} 180 x 10^{-6}	8 hours	1 year
	301-2FL	Two	Clear/ Colorless	80°C – 3 hours 23°C – 3 days	100-200 cPs @ 100 rpm	>45°C	>10 kg/3,400 psi	1.5115	>99% @ 400-1000 nm >97% @ 1000-1600 nm	325°C	56 x 10^{-6} 211 x 10^{-6}	10 hours	1 year
	302-3M	Two	Clear/ Colorless	65°C – 3 hours 23°C – 24 hours	800-1,600 cPs @ 100 rpm	≥55°C	≥10 kg/3,400 psi	1.5446	>95% @ 460-1620 nm	351°C	57 x 10^{-6} 193 x 10^{-6}	1 hour	1 year
OPTICAL	353ND	Two	Amber/Dark Red	150°C – 1 min 80°C – 30 min	3,000-5,000 cPs @ 50 rpm	≥90°C	≥15 kg/5,100 psi	1.5694	>50% @ 550 nm >98% @ 800-1000 nm >95% @ 1100-1600 nm	412°C	54 x 10^{-6} 206 x 10^{-6}	≤3 hours	1 year
	354-T	Two	Tan/Dark Red	150°C – 10 min 120°C – 30 min 80°C – 2 hours	11,000-20,000 cPs @ 20 rpm	≥95°C	≥10 kg/3,400 psi	N/A	N/A	485°C	51 x 10^{-6} 179 x 10^{-6}	3 days	6 months
	360	Two	Amber/Dark Amber	150°C – 1 min 100°C – 10 min	350–550 cPs @ 100 rpm	≥90°C	≥10 kg/3,400 psi	1.5345	>97% @ 700-1600 nm >88% @ 600 nm >51% @ 500 nm	375°C	39 x 10^{-6} 175 x 10^{-6}	6 hours	1 year
	377	Two	Amber/Dark Amber	150°C – 1 hour	150-300 cPs @ 100 rpm	≥95°C	≥10 kg/3,400 psi	1.5195	>99% @ 600 nm >95% @ 1000-1500 nm	375°C	57 x 10^{-6} 210 x 10^{-6}	24 hours	1 year
UV	OG116-31	One	White/White	100mW/cm² for >2 min @ 320-500 nm	20,000-30,000 cPs @ 10 rpm	≥115°C	≥10 kg/3,400 psi	1.5662	>96% @ 660-1640 nm >92% @ 500 nm	409°C	41 x 10^{-6} 170 x 10^{-6}	N/A	1 year
	OG134	One	Light Yellow Yellow	100mW/cm² for > 4 min @ 320-500 nm	50-100 cPs @ 100 rpm	≥15°C	≥4 kg/1,360 psi	1.4230	>99% @ 580-1100 nm >98% @ 1600 nm	250°C	156 x 10^{-6} 208 x 10^{-6}	N/A	1 year
	OG142-95	One	Clear Colorless	100mW/cm² for >2 min @ 320-500 nm	534 cPs @ 100 rpm	N/M	15.2 kg/ psi	1.4946	>97% @ 580-1680 nm	358°C	50 x 10^{-6} 162 x 10^{-6}	N/A	1 year refrigerated

N/A - not applicable, as these are filled systems N/M - not measured

EPOXY TECHNOLOGY

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