

# EPO-TEK® Specialty Adhesives for Sensor Applications

Epoxy Technology Inc. has an extensive offering of specialty adhesives for Sensor Applications: from Electrically Conductive, to Thermally Conductive, to Optical Grade Adhesives, as well as UV Epoxy and UV Hybrid Adhesives. Our EPO-TEK® brand adhesives are globally recognized for quality, performance and reliability.

## Optical Adhesives



*Optical Applications* - such as cameras, lasers, LEDs and photo-diodes, LiDAR and IR, where our optical, semiconductor die-attach, and UV curing products are used. EPO-TEK® products: **301-2**, **353ND**, **H20E**, **EK1000** and **OG198-54**

## Ultrasonic Adhesives

*Ultrasonic Applications* - such as in PZT fabrication and packaging, flex circuit assembly, electrical contacts and acoustic matching. EPO-TEK® products: **301**, **301-2FL**, **310M-1**, **353ND**, **EJ2189-LV** and **H20E**



## MEMS and IC Packaging Adhesives



*MEMS and IC Packaging Applications* - such as accelerometers, micro-actuators, gyros, and pressure sensors, where our EPO-TEK® products for semiconductor die-attach, wafer level spin coating, underfill, hermetic and hybrid microelectronics are used. EPO-TEK® products: **360**, **H20S**, **930-4**, **T6067-3**, **OJ2933-LH**, and **OD1001-67**

## RF/Radar Adhesives

*RF/Radar Applications* - such as hermetic and semi-hermetic packaging, transmitters and antenna, advanced driver assistance, and RFID transponders, where our EPO-TEK® products are used in semiconductor die attach, electrically and thermally conductive applications, and UV curing glob top. EPO-TEK® products: **353ND**, **H20S**, **H70E**, **H20E-PFC**, **OG116-31**, **OG142**, **OG653**, and **U300-2**



## Biometric and Biosensor Adhesives



*Biometric and Biosensor Applications* - such as wearable electronics for fitness and consumer health, fingerprint and retinal scanners, gesture and movement recognition and bio-tech remote monitoring. EPO-TEK® products: **MED-301**, **MED-320**, **MED-353ND**, **MED-T7110**, **MED-H20E**, and **EJ2189-LV**

# Selected Product Listings For Sensor Applications

## Optical

EPO-TEK®	COLOR Before/After CURE (thin film)	CURE CONDITIONS (minimal)	VISCOSITY @ 23°C (cPs)	INDEX OF REFRACTION Nd @589nm	POT LIFE (@ room temp)
<b>301</b>	Clear / Colorless	65°C – 1 hour 23°C – 24 hours	@ 100 rpm 100 – 200	1.5190	1-2 hours
<b>301-2</b>	Clear / Colorless	80°C – 3 hours 23°C – 2 days	@ 100 rpm 225 – 425	1.5318	8 hours
<b>301-2FL</b>	Clear / Colorless	80°C – 3 hours 23°C – 3 days	@ 100 rpm 100 – 200	1.5102	10 hours
<b>310M-1</b>	Clear / Colorless	65°C – 2 hours 23°C – 24 hours	@ 100 rpm 100 – 600	1.5129	2 hours
<b>353ND</b>	Amber / Dark Amber	150°C – 1 min 80°C – 30 min	@ 50 rpm 3,000 – 5,000	1.5694	3 hours
<b>360</b>	Light Yellow / Dark Amber	150°C – 1 min 100°C – 10 min	@ 100 rpm 350 – 550	1.5345	6 hours
<b>OD1001-67</b>	Cream / Yellow	150°C – 1 hour	@ 100 rpm 1,000 – 2,500	1.5247	28 days
<b>OJ2933-LH</b>	Light Yellow / Amber	150°C – 1 hour	@ 1 rpm 65,000 – 140,000	1.5686	2 days
<b>U300-2</b>	Amber / Dark Amber	150°C – 1 hour	@ 20 rpm 3,700 – 6,700	1.5746	2 days

## Thermal

EPO-TEK®	CURE CONDITIONS (minimal)	VISCOSITY @ 23°C (cPs)	DIE SHEAR STRENGTH @ RT (80 mil X 80 mil)	THERMAL CONDUCTIVITY (W/m²K)	POT LIFE (@ room temp)
<b>930-4</b>	150°C – 1 hour 80°C – 6 hours	@ 20 rpm 12,000 – 17,000	≥15kg / 5,334psi	1.70	1 day
<b>T6067-3</b>	150°C – 1 hour	@ 1 rpm 100,000 – 150,000	≥25kg / 8,890psi	1.00	28 days
<b>T7110</b>	80°C – 2 hours 23°C – 3 days	@ 100 rpm 1,400 – 2,200	≥10kg / 3,556psi	1.00	3.5 hours

## Electrical

EPO-TEK®	CURE CONDITIONS (minimal)	VISCOSITY @ 23°C (cPs)	VOLUME RESISTIVITY (ohm-cm)	THERMAL CONDUCTIVITY (W/m²K)	POT LIFE (@ room temp)
<b>EJ2189-LV</b>	150°C – 1 hour 23°C – 3 days	@ 1 rpm 25,000 – 45,000	≤0.009	2.50	4 hours
<b>EK1000</b>	150°C – 1 hour + 200°C – 1 hour (post)	@ 100 rpm 1,800 – 3,600	≤0.00009	12.60 26.30	2 weeks
<b>H20E</b>	150°C – 5 min 80°C – 3 hours	@ 100 rpm 2,200 – 3,200	≤0.0004	2.50	2.5 days
<b>H20E-PFC</b>	175°C – 45 sec 80°C – 3 hours	@ 100 rpm 3,000 – 4,000	≤0.0004	3.20	3 days
<b>H20S</b>	150°C – 5 min 80°C – 90 min	@ 100 rpm 1,800 – 2,800	≤0.0005	3.30	3 days

## UV

EPO-TEK®	CURE CONDITIONS 100mW/cm² @ 240 – 365nm (minimal)	VISCOSITY @ 23°C (cPs)	INDEX OF REFRACTION Nd @589nm	PERFORMANCE FEATURES
<b>OG116-31</b>	> 30 sec	@ 10 rpm 20,000 – 30,000	1.5842	High chemical resistance, high Tg & high index
<b>OG142</b>	> 30 sec	@ 20 rpm 9,000 – 15,000	1.5809	Medium viscosity, high strength, moisture resistance
<b>OG198-54</b>	> 30 sec	@ 100 rpm 200 – 450	1.5256	Low viscosity, high Tg, shadow curing
<b>OG653</b>	> 1 sec	@ 100 rpm 650 – 850	1.5106	Low viscosity, green colored, light blocking properties, very fast cure (1-3 sec @ 365nm)

## Biocompatible/Medical

EPO-TEK®	PERFORMANCE FEATURES
<b>MED-301</b>	Clear, low viscosity, room temp cure, used for potting
<b>MED-320</b>	Black, opaque, thixotropic paste, room temp cure, potting, low fluorescence
<b>MED-323LP</b>	Medium viscosity, long pot life with high Tg
<b>MED-353ND</b>	Medium viscosity, high Tg, high strength (worldwide standard for optics)
<b>MED-H20E</b>	Smooth thixotropic paste, ECA with high thermal conductivity and high reliability
<b>MED-T7110</b>	Pourable, TCA with low viscosity, potting

All EPO-TEK® Medical Device grade adhesives (“MED”) are ISO 10993 tested for biocompatibility



DISCLAIMER: Data presented is provided only to be used as a guide. Properties listed are typical, average values, based on tests believed to be accurate. It is recommended that users perform a thorough evaluation for any application based on their specific requirements. Epoxy Technology makes no warranties (expressed or implied) and assumes no responsibility in connection with the use or inability to use these products.

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