

Jewelry and Watches

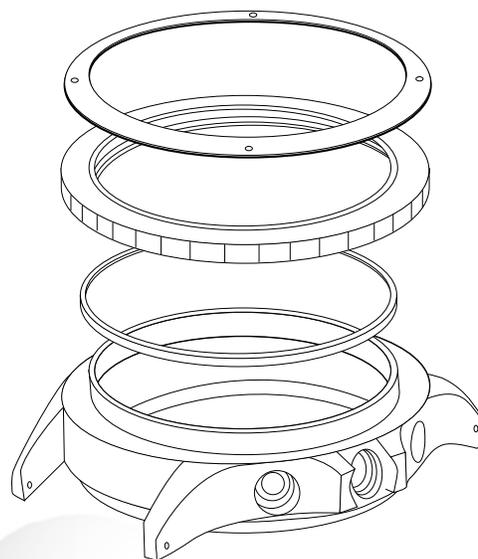
Why use Epoxies in your Jewelry and Watch Assembly?

Epoxies are well suited for many demanding applications, such as jewelry and watches. They have a high bond strength to a wide variety of substrates including: ceramics, glass, sapphire, quartz, and metals, such as stainless steel, gold, and platinum. The high-performing mechanical and physical strength properties of epoxies make them the ideal choice for an adhesive.



What are some Typical Applications?

- Component bonding (quartz, batteries, piezos, etc.)
- Assembly of bezel insert, bezel and circlip into case
- Component bonding of the various elements onto the bezel insert
- Quartz crystal oscillator circuit assembly
- Glass/Sapphire bonding
- Component bonding, such as rubies, in movements
- Bonding of watch crown
- Bonding of various decorative pieces onto face of the watch
- Bracelets and necklaces



What types of EPO-TEK® Products are Best Suited in Jewelry and Watch Assembly?

EPO-TEK	Key advantages/ Characteristics
301	Very low viscosity, room-temperature curing
301-2	Low viscosity, room temperature curing, long pot life (8 hours)
301-2FL	More flexible version of EPO-TEK® 301-2, low stress
310-2FL-T	Slightly thixotropic version of EPO-TEK® 301-2FL
310M/310M-1	Flexible, low viscosity
353ND	High temperature and moisture resistance
H20E/H20S	Silver-filled, high electrical conductivity and short curing cycles
OE145-4	Low viscosity, excellent water, chemical, and solvent resistant properties
OG142	UV-curable epoxy, medium viscosity, high strength, high Tg
T7109	High performance, thermally conductive
T7110	Low viscosity, thermally conductive, electrically insulating epoxy, low temperature cure

All products are also available as single components, premixed in syringes.



How Do The EPO-TEK Properties Compare?

EPO-TEK®	NO. of COMPONENTS	COLOR Before/ After CURE (thin film)	CURE TEMPERATURE (min/max)	VISCOSITY @ 23°C	GLASS TRANSITION TEMPERATURE (Tg)	DIE SHEAR STRENGTH @ RT (80mil x 80mil)	SPECTRAL TRANSMISSION	TGA DEGRADATION TEMPERATURE	CTE Below 7g/Above 1g (in/in/°C)	POT LIFE (@ room temp.)	SHELF LIFE (@ room temp. unless noted)
301	Two	Clear/ Colorless	65°C - 2 hours 23°C - 24 hours	100 - 200 cPs @ 100 rpm	≥65°C	≥10 kg/3,400 psi	≥99% @ 382 - 980 nm ≥97% @ 980 - 1,640 nm ≥95% @ 1,640 - 2,040 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	≥94% @ 300 nm ≥99% @ 400 - 1,200 nm ≥98% @ 1,200 - 1,600 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	≥97% @ 1,000 - 1,600 nm ≥99% @ 400 - 1,000 nm	325°C	56 X 10 ⁻⁶ 211 X 10 ⁻⁶	10 hours	1 year
301-2FL-1	Two	Clear/ Colorless	80°C - 3 hours 23°C - 3 days	300 - 600 cPs @ 100 rpm	≥40°C	≥5 kg/1,778 psi	≥97% @ 380 - 2,100 nm	336°C	N/A	5 hours	1 year
310M	Two	Clear/ Colorless	65°C - 2 hours 23°C - 24 hours	450 - 850 cPs @ 100 rpm	≥30°C	≥2 kg/680 psi	≥97% @ 400 - 1,300 nm ≥90% @ 1,400 - 2,200 nm	397°C	78 X 10 ⁻⁶ 222 X 10 ⁻⁶	2.5 hours	1 year
310M-1	Two	Clear/Light Yellow	65°C - 2 hours 23°C - 24 hours	315 cPs @ 100 rpm	28°C	7.3 kg	≥98% @ 360 - 1,660 nm	300°C	60 X 10 ⁻⁶ 229 X 10 ⁻⁶	2 hours	1 year
353ND	Two	Amber/Dark Red	150°C - 1 hour 80°C - 30 min	3,000 - 5,000 cPs @ 50 rpm	≥90°C	≥15 kg/5,100 psi	≥50% @ 550 nm ≥98% @ 800 - 1,000 nm ≥95% @ 1,110 - 1,600 nm	412°C	54 X 10 ⁻⁶ 206 X 10 ⁻⁶	≤3 hours	1 year
H20E	Two	Silver/Silver	175°C - 45 seconds 80°C - 3 hours	2,200 - 3,200 cPs @ 100 rpm	≥80°C	>10 kg/3,400 psi	N/A	425°C	31 X 10 ⁻⁶ 158 X 10 ⁻⁶	2.5 days	1 year
H20S	Two	Silver/Silver	175°C - 45 seconds 80°C - 90 min	1,800 - 2,800 cPs @ 100 rpm	≥80°C	≥5 kg/1,700 psi	N/A	414°C	31 X 10 ⁻⁶ 120 X 10 ⁻⁶	3 days	1 year
OE145-4	Two	Light Yellow/ Yellow	65°C - 3 hours 80°C - 24 hours	683 cPs @ 100 rpm	59°C	22 kg	≥95% @ 500-1,600 nm	363°C	N/A	2 hours	1 year
06142	One	Clear/ Colorless	100mmW/cm ² for >2 min @ 240-365 nm	9,000 - 15,000 cPs @ 20 rpm	≥95°C	≥4 kg/1,360 psi	≥97% @ 660 - 1,640 nm ≥92% @ 440 - 620 nm	421°C	56 X 10 ⁻⁶ 109 X 10 ⁻⁶	N/A	1 year
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	377°C	46 X 10 ⁻⁶ 239 X 10 ⁻⁶	4 hours	1 year
T7110	Two	Grey/Grey	150°C - 15 min 23°C - 3 days	1,400 - 2,200 cPs @ 100 rpm	≥40°C	≥10 kg/3,400 psi	N/A	314°C	31 X 10 ⁻⁶ 142 X 10 ⁻⁶	3.5 hours	1 year

N/A - not available/applicable

All products are also available as single components, premixed in syringes.



Please consult our *Application Experts* at Epoxy Technology to find the most suitable adhesives for your specific technical challenges at: techserv@epotek.com.

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