EPO-TEK® Recommended Applications Chart

EPO-TEK Applications	920-FL	930-4	H65-175MP	H67-MP	H70E	H70E-2	H74	H77	T7109	T7109-19	T7110	T905BN-3	TD1001	TJ1104-LH	TV2001	TZ101
Substrate Attach	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*
Lid Attach			*	*			*	*								
Heat Sinking Adhesive	*	*	*	*	*		*	*	*	*	*	*	*		*	*
Die Attach Hybrid/MCM		*	*	*	*				*	*			*	*	*	*
Chip Encapsulant						*				*	*				*	*
MIL-STD 883/5011 Compliant			*	*												
Die Attach Semiconductor		*	*	*	*				*	*			*	*	*	*
Aerospace Environments/ NASA Approved			*	*	*		*	*	*							
High Temp. Applications	*	*	*	*			*	*	*				*	*	*	*
Cryogenic Applications									*	*	*	*				*
SMD Attach		*	*	*	*	*	*	*	*	*		*	*	*	*	*
Potting and Cavity Filling	*						*	*		*	*	*	*		*	

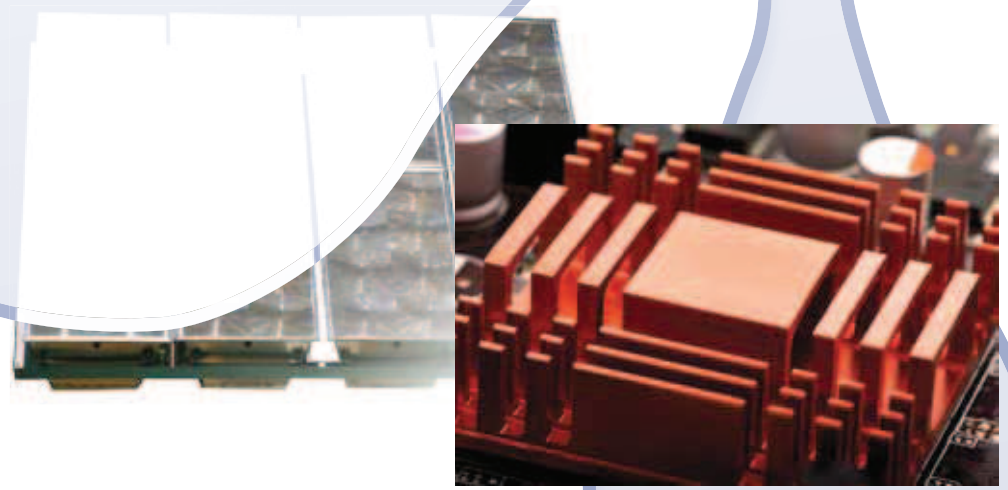
Thermally Conductive / Electrically Insulating

Epoxy Adhesives

Epoxy Technology's thermally conductive line of epoxies are used extensively in many high-tech electronic applications. EPO-TEK products are unparalleled in their performance in effectively removing heat, providing increased dielectric strength and protecting circuits from hostile environments. Our epoxy adhesive properties can range from rigid (providing robust, thermally enhanced circuit protection) to flexible (ideal for substrates with significant CTE mismatches).

Representative examples from our extensive offering:

- **EPO-TEK H65-175MP and EPO-TEK H70E are the most common for bonding IC's in semiconductor or hybrid microelectronic packaging.**
- **EPO-TEK 930-4 has been very useful in heat sinking power devices such as AC-DC convertor modules.**
- **EPO-TEK T7109 is ideal for removing heat from high power LEDs and laser diodes (EPO-TEK T7109-19 is an even more compliant version designed for large area bonding).**
- **EPO-TEK TJ1104-LH is a black, single component, low halogen die attach adhesive with extended pot life; exceptional die shear strength (36kg/12,800psi), ideal for LCP to LCP lid attach applications.**
- **EPO-TEK TD1001 is a single component, very long pot life, stress relieving, thermal management material with outstanding mechanical properties. Commonly used in ferrite core bonding applications where low stress is critical.**



Please consult our Applications Experts For Adhesive Recommendations and Discussions

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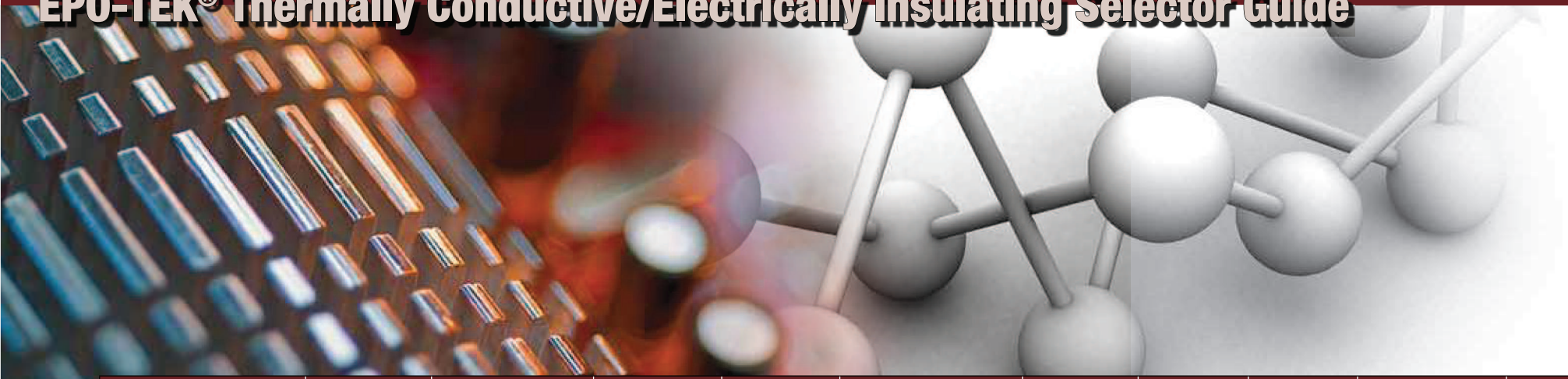
EPO-TEK® Thermally Conductive/Electrically Insulating Selector Guide



EPO-TEK	NO. OF COMPONENTS	CURE TEMPERATURE (minimal)	VISCOSITY @ 23°C (cPs)	GLASS TRANSITION TEMPERATURE (T_g)	DIE SHEAR STRENGTH @ RT (80 mil X 80 mil)	THERMAL CONDUCTIVITY (W/m°K)	MAX. OPER. TEMPERATURE CONTINUOUS	TGA DEGRADATION TEMPERATURE	CTE Below T_g / Above T_g (in/in/°C)	POT LIFE (@ room temp)	SHELF LIFE (@ room temp) or ** @-40°C
920-FL	Two	150°C – 5 min 100°C – 20 min	@ 20 rpm 8,000 – 12,000	≥90°C	≥20kg / 6,800psi	0.89	200°C	362°C	21 x 10^{-6} / 97 x 10^{-6}	7 hours	1 year
930-4	Two	150°C – 10 min 80°C – 6 hours	@ 20 rpm 12,000 – 17,000	≥90°C	≥15kg / 5,100psi	1.67	200°C	425°C	27 x 10^{-6} / 136 x 10^{-6}	1 day	1 year
† H65-175MP	Single	180°C – 1 hour	@ 2.5 rpm 80,000 – 120,000	≥100°C	≥20kg / 6,800psi	0.79	200°C	397°C	38 x 10^{-6} / 136 x 10^{-6}	28 days	1 year**
† H67-MP	Single	150°C – 1 hour	@ 1 rpm 300,000 – 400,000	≥90°C	≥20kg / 6,800psi	0.45	200°C	350°C	16 x 10^{-6} / 68 x 10^{-6}	28 days	1 year**
H70E	Two	175°C – 1 min 80°C – 90 min	@ 50 rpm 4,000 – 7,000	≥80°C	≥10kg / 3,400psi	0.90	200°C	451°C	15 x 10^{-6} / 64 x 10^{-6}	56 hours	1 year
H70E-2	Two	175°C – 1 min 80°C – 90 min	@ 20 rpm 9,000 – 15,000	≥80°C	≥5kg / 1,700psi	1.00	200°C	447°C	20 x 10^{-6} / 112 x 10^{-6}	2 days	1 year
H74	Two	150°C – 5 min 100°C – 20 min	@ 5 rpm 45,000 – 65,000	≥100°C	≥15kg / 5,100psi	1.25	250°C	425°C	21 x 10^{-6} / 95 x 10^{-6}	2 hours	1 year
H77	Two	150°C – 1 hour	@ 20 rpm 6,000 – 12,000	≥80°C	≥5kg / 1,700psi	0.66	250°C	405°C	33 x 10^{-6} / 130 x 10^{-6}	6 hours	1 year
T7109	Two	150°C – 10 min 80°C – 8 hours	@ 20 rpm 14,000 – 20,000	≥45°C	≥15kg / 5,100psi	0.70	200°C	377°C	46 x 10^{-6} / 239 x 10^{-6}	4 hours	1 year
T7109-19	Two	80°C – 2 hours 23°C – 2 days	@ 5 rpm 40,000 – 70,000	<40°C	5kg / 1,700 psi	1.30	150°C	338°C	59 x 10^{-6} / 216 x 10^{-6}	2 hours	1 year
T7110	Two	80°C – 2 hours 23°C – 3 days	@ 100 rpm 1,400 – 2,200	≥40°C	≥10kg / 3,400psi	1.00	150°C	314°C	31 x 10^{-6} / 142 x 10^{-6}	3.5 hours	1 year
T905BN-3	Two	80°C – 2 hours	@ 50 rpm 2,000 – 7,000	≥40°C	≥10kg / 3,400psi	2.02	200°C	347°C	37 x 10^{-6} / 151 x 10^{-6}	3 hours	1 year
TD1001	Single	125°C – 1 hour	@ 5 rpm 10,000 – 22,000	≥40°C	≥15kg / 5,100psi	0.77	225°C	436°C	57 x 10^{-6} / 213 x 10^{-6}	28 days	1 year**
TJ1104-LH	Single	200°C – 5 min 140°C – 40 min	@ 1 rpm 77,414	117°C	36kg / 12,800psi	0.48	225°C	393°C	42 x 10^{-6} / 130 x 10^{-6}	>7 days	1 year**
TV2001	Two	160°C – 5 min 80°C – 90 min	@ 20 rpm 10,000 – 20,000	≥35°C	≥15kg / 5,100psi	0.40	225°C	466°C	67 x 10^{-6} / 189 x 10^{-6}	2 days	1 year
TZ101	Single	150°C – 1 hour	@ 10 rpm 24,000 – 30,000	≥40°C	≥10kg / 3,400psi	0.93	175°C	355°C	32 x 10^{-6} / 173 x 10^{-6}	28 days	1 year**

Note: 23°C denotes RT cure
† MIL-STD 883/5011 certified
** @-40°C