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HANDHELD COMMUNICATION AND COMPUTING

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UNDERFILL ENCAPSULANTS

Product	Chemistry	Viscosity at 25°C (Pa.s)	Work Life at 25°C	Underfill Time (s)	Recommended Cure Schedule(s)	Filler Content (%)	CTE (ppm/°C)	Tg (°C)	Features
Capillary Flow Underfill Encapsulants									
E 1216	Epoxy	# 3 @ 5 rpm : 6	1 week	17[1]	10 min. @ 130°C or 5 min. @ 150°C	44	34	115	One component, non-anhydride curing capillary flow underfill for BGA, CSP. E 1216 is designed for high volume assembly operations that require an underfill that flows very fast and fully cures in the length of one reflow oven.
E 1172 A	Epoxy	# 3 @ 5 rpm : 17	48 h	33[2]	6 min. @ 135°C or 3 min. @ 150°C	66	27	135	One component, non-anhydride curing underfill providing fast flow, fast cure and enhanced moisture resistance. Formulated for use with very fine pitch area array devices and flip chips, easily underfilling devices with 25 micron geometries.
No Flow Fluxing Underfill Encapsulants									
XNF 1504	Epoxy	# CP 51 @ 20 rpm : 7	24 h	-	SMT reflow profile	-	90	20	This toughened low modulus, no flow underfil performs excellent on both Ni-Au and OSP (Organic Solder Preserved) surface finishes. Cures through one reflow oven exposure. No post-cure required. The low modulus allows easy rework of components after assembly and is desirable for maximum performance in mechanical testing (drop, bend).

(1) 1 cm travel @ 80°C on glass 200 μ gap (2) 1 cm travel @ 90°C on glass 100 μ gap

Product	Chemistry / Filler	Viscosity at 25°C (Pa.s)	Work Life at 25°C	Application Method			Recommended Cure Schedule(s)	Volume Resistivity (Ohm.cm) Typical Value	Tensile Lap Shear Strength (MPa) Typical Value	Service Temperature	Features
				Dispensing	Printing	Pin Transfer					
Electrically Conductive Adhesives for Circuit Assembly (Solder Alternatives)											
CE 3103	Epoxy / Ag	$\dot{\gamma} = 15\ s^{-1}$: 40 - 60	24 h	•			3 min. @ 150°C or 5 min. @ 125°C	0,0004	8	-45 to +150°C	One component, epoxy adhesive with stable contact resistance on all traditional printed circuit board metal finishes including Sn. Compatible with existing SMT assembly lines.
CE 3103 WLV	Epoxy / Ag	$\dot{\gamma} = 15\ s^{-1}$: 15 - 25	3 days	•		•	3 min. @ 150°C or 5 min. @ 125°C	0,0009	13	-45 to +150°C	One component, epoxy adhesive with stable contact resistance on all traditional printed circuit board metal finishes including Sn. Provides consistent, small dot dispensing.
CE 3104 WXL	Epoxy / Ag	$\dot{\gamma} = 15\ s^{-1}$: 60 - 85	24 h		•		3 min. @ 150°C or 5 min. @ 125°C	0,0003	8	-45 to +150°C	One component, epoxy adhesive with stable contact resistance on all traditional printed circuit board metal finishes including Sn. Compatible with existing SMT assembly lines.
CE 3504 FP	Epoxy / Ag	# TD @ 10 rpm : 35 - 55	2 days	•	•		30 min. @ 100°C or 30 s hot plate 180°C	0,0002	13	-45 to +150°C	Silver filled, epoxy adhesive. Features excellent electrical conductivity, high bond strength and heat resistance after cure. Low temperature cure allows the use of heat sensitive polyester substrates.
CE 3516	Epoxy / Ag	$\dot{\gamma} = 15\ s^{-1}$: 65 - 75	1 week	•	•		30 min. @ 140°C	0,0003	9	-45 to +150°C	One component, non-bleeding epoxy adhesive with low outgassing, eliminating wicking and bridging under small components.

Product	Chemistry	Viscosity at 25°C (Pa.s)	Colour	Application Method			Cure Time at 120°C	Tg (°C)	Tensile Lap Shear Strength (MPa) Typical Value	Service Temperature	Features
				Dispensing	Printing	Pin Transfer					
Surface Mount Adhesives											
ECCOBOND™ D 125 F	Epoxy	300 - 400	yellow, dark red	•	•	•	2,5 min.	85	6	-40 to +120°C	Low exotherm, low water absorption. High hot strength. High speed dispensing without stringing.
ECCOBOND D 125 F 3	Epoxy	550 - 650	yellow	•	•	•	2,5 min.	73	8	-40 to +120°C	Low exotherm, low water absorption. High hot strength. Extreme green strength.
ECCOBOND D 125 F 5	Epoxy	2500 - 2600	yellow	•	•		2,5 min.	73	6	-40 to +120°C	Low exotherm, low water absorption. High hot strength. Extreme green strength.
ECCOBOND E 6752	Epoxy	185	fluorescent red	•			3,5 min.	65	14	-40 to +120°C	Very high speed dispensing (50.000 dots/hour).