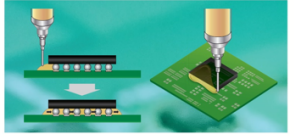
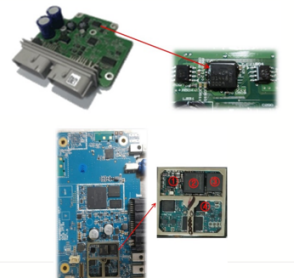


# アンダーフィル

## Mobile – Main board


Application	Attributes	High reliability version		
		300(A)	2010	
	Typical Uncured Material Properties			
	Chemistry	Thiol	Acid anhydride	
	Color	Milky-white	Black	
	Viscosity (via Brookfield, 25°C, 30rpm)	2,200-3,400	300-800	
	Filler Content(SiO <sub>2</sub> ), %	-	10	
	Filler Size, μm	-	0.7	
	Specific Gravity	1.1-1.2	1.260	
	Cure Condition, °C/min	135/5	130/10	
	Pot-life, days @25°C	20	1	
	Typical Cured Material Properties			
	Hardness	30-40D	84D	
	Young's Modulus, Mpa (via DMA)	171	1,785	
	Tg, °C (via TMA)	25	142	
	CTE, ppm/°C (via TMA)	α <sub>1</sub>	65	65
		α <sub>2</sub>	200	167
Key features	Highly Reworkable Excellent bending reliability Long pot-life at room temperature	Low viscosity Reworkable Suitable for fine pitch Suitable for high reliability mobile devices		

## Automotive BGA components for Telematics, ACU, ECU

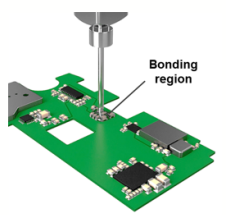
Application	Attributes	High reliability version		
		3127	3240	
	Typical Uncured Material Properties			
	Chemistry	Acid anhydride	Imidazole	
	Color	Black	Black	
	Viscosity (via Brookfield, 25°C, 30rpm)	1,000-4,000	11,000	
	Filler Content(SiO <sub>2</sub> ), %	56	50	
	Filler Size, μm	0.7	3	
	Specific Gravity	1.55-1.6	1.5-1.6	
	Cure Condition, °C/min	140/20	150/10	
	Pot-life, days @25°C	1	3	
	Typical Cured Material Properties			
	Hardness	85-95D	80D	
	Young's Modulus, Mpa (via DMA)	9,120	5,508	
	Tg, °C (via TMA)	177	165	
	CTE, ppm/°C (via TMA)	α <sub>1</sub>	29	31
		α <sub>2</sub>	107	105
Key features	Pre-heat not required for penetration Poor stability Suitable for high reliability	Pre-heat required for penetration Excellent stability Suitable for high reliability		

# コーナーボンド

## Reworkable · High reliability

Application	Attributes	High reliability version	
		4010	4012
	Typical Uncured Material Properties		
	Chemistry	Cationic	Cationic
	Color	White	White
	Viscosity (via Brookfield, 25°C, 30rpm)	14,500	70,000
	Thixotropic index	2.5	4.0
	Filler Content(SiO <sub>2</sub> ), %	62	62
	Filler Size, μm	3	3
	Specific Gravity	1.62	1.64
	Cure Condition, °C/min	130/10	130/10
	Pot-life, days @25°C	3	3
	Typical Cured Material Properties		
	Hardness	86D	90D
	Young's Modulus, Mpa (via DMA)	5,853	5,853
	Tg, °C (via TMA)	172	170
	CTE, ppm/°C (via TMA)	α <sub>1</sub>	26
α <sub>2</sub>		69	69
Player	NPD level	NPD level	
TCT @-40~125°C / Dwell 30min / 1cycle Rework	2,000(▲)	2,000(▲)	
	○	○	

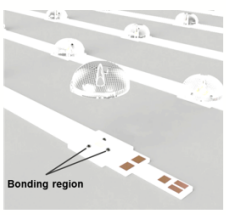
# ホットイング剤

Application	Attributes	Product		Remarks
		ALPHA® HiTech™		
		EN31-4007B		
	Appearance	Slight black	Pale yellow	
	Viscosity (cps)	17,000-23,000	8,000-15,000	Malcom @25°C, 30rpm
	Thixotropic index	-	≥ 3.0	3rpm / 30rpm
	Cure condition	≥5min @135°C	≥20min @130°C ≥10min @150°C	Convection oven
	Hardness	30-40D	75-85D	Durometer
	Tg	25°C(±5)	50°C(±5)	TMA
	Application	Protect an assemble chipe components from cracking, Water Proofing		
	Market	Mobile		
	Key features	-Excellent bending	-Prevention of migration	
		-Reworkable	-Prevention of waterproof	
		-Excellent storability (20days @25°C)		

# 低温硬化樹脂 CAMERA MODULES APPLICATIONS

Alpha Hi-Tech™	AD13-9555B-6	AD13-9521B	AD13-9692B	AD13-9693B	CU13-3150	AD13-9565B
Typical Uncured Material Properties						
Application	High viscosity	Medium flow rate	High viscosity	Medium flow rate	Low viscosity	None-RBO
Color	Black	Black	Black	Black	Black	Black
Viscosity @RV DV-II Brookfield	Spindle/rpm	Jun-30	Jun-30	Jun-30	Mar-20	
	cps/25°C	8,000-12,000	4,000-12,000	1,000-3,000		
Viscosity @Malcom PC-10A	rpm	30	30		30	
	cps/25°C	21,000-26,000	8,000-18,000		10,000-20,000	
Thixotropic index	3rpm/30rpm	6.1-6.5	1.7-2.1	4.3-5.3	-	3.0-4.0
	Specific Gravity	1.1-1.2	1.0-1.2	1.1-1.3	1.0-1.2	1.1-1.2
Cure Condition, °C/min	85/20	85/30	80/30	80/30	80/30	85/20
Pot Life, days	3	3	3	3	3	3
Typical Cured Material Properties						
Hardness	65-75D	75-85D	65-75D	65-75D	50-60D	65-75D
Young's Modulus, Mpa	36.22	-	23.29	-	-	17.38
Shrinkage, %	Tg, °C (via TMA)	1.17	-	1.09	-	1.09
		40	55	45	45	47
CTE, ppm/°C (via TMA)	α <sub>1</sub>	60	60	55	55	50
	α <sub>2</sub>	180	180	175	175	200

## Low temperature BLU lens attachment

Application	Attributes	Product		Remarks
		ALPHA® HiTech™		
		AD43-9600W		
	Appearance	White paste		
	Viscosity (cps)	30,000-50,000		Brookfield #7 @25°C, 30rpm
	Thixotropic index	-		3rpm / 30rpm
	Cure condition	≥2min @80°C		Reflow
	Hardness	70-80D		Durometer
	Tg	55°C(±5)		TMA
	Application	Back light Unit(BLU)		
	Key feature	-Excellent adhesion		
		-Excellent reliability		