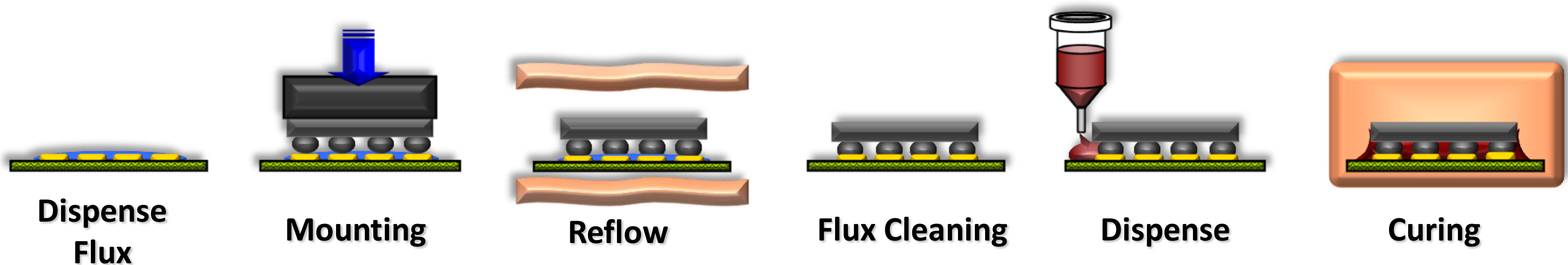
FLIP CHIP UNDERFILL

NAMICS

ASSEMBLY PROCESS FOR CAPILLARY FLOW UNDERFILL



This is the best way to start dispensing	No go
Second best dispense pattern	No go

NAMICS

Key Requirements

- Low-K Protection
- Low Stress with large Dies
- Narrow Gap and Fine Pitch Capability
- Void Free Dispensing
- No Filler Separation regardless of Underbump
- Smallest possible Keep-Out-Zone (KOZ)
- Excellent Fluidity
- Bleed and Creep Control
- Jet-able

KEY PRODUCTS

Product Designation			U8439-105	U8410-99	U8410-119	U8410-73C	U8410-73CF3	XS8410-73CF30F50	XS8410-99LL3	U8410-302	XS8410-302F2	XS8410-302SN3	U8410-119A	XS8410-119ASNS1
Key Characteristics			Fine Pitch Narrow Gap	Medium Pitch and Gap	Fine Pitch Narrow Gap	Fine Pitch Narrow Gap	Finer Gap	Finer Gap More Flex	Finer Gap More Flex	Fine Pitch Narrow Gap	Fine Pitch Narrow Gap	Finer Gap More Flex	Finer Gap More Flex	Fine Pitch Narrow Gap
			Low Stress for Low-K	Reduce Stress, Low Warpage	Hi Temp. Reliability	Pb-Free and Cu Pillar	Less Bleed, Less Creep	Less Bleed, Less Creep	Long Work Life for WL-POP	Standard for FCBGA	Low-K Protection	Low-K Protection	Hi Temp. Reliability	Low-K Protection and Hi Temp. Reliability
Curing System			Epoxy - Phenol	Epoxy-Amine										
Filler	Contents	wt%	55	60	65	65	55	50	60	67	65	53	60	55
	Size (mean)	µm	**0,6**	**2**	**2**	**0,6**	**0,5**	**0,5**	**2**	**1**	**0,5**	**0,6**	**0,6**	**0,6**
	Size (max.)		3	10	10	3	0,6	0,6	10	5	3	3	3	3
Viscosity	@ 25C, 50 rpm	Pa.s	55	50	80	50	33	17	40	55	49	40	50	65
Tg	DMA	°C	80	119	132	107	107	107	113	115	115	110	128	128
	TMA		70	100	110	88	88	88	99	95	95	90	110	110
C.T.E.	<Tg	ppm/ °K	**33**	**26**	**24**	**27**	**31**	**34**	**27**	**22**	**25**	**30**	**29**	**35**
	>Tg		120	100	90	95	119	128	100	88	93	125	100	115
Storage Modulus	<Tg	GPa	**8,5**	**10,7**	**11,0**	**11,0**	**9,4**	**8,0**	**10,7**	**11,0**	**10,9**	**7,0**	**9,5**	**7,8**
	>Tg		0,03	0,09	0,13	0,08	0,08	0,05	0,06	0,2	0,13	0,07	0,012	0,08
Curing			165°C / 1,5 h	150°C / 2 h	150°C / 2 h	150°C / 2 h	150°C / 2 h	150°C / 2 h	150°C / 2 h	165°C / 2 h	165°C / 2 h	165°C / 2 h	150°C / 2 h	150°C / 2 h

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THANK YOU