LOCTITE®

A NEW PARADIGM FOR ADVANCED Si NODE FLIP CHIP PROTECTION

LOCTITE® *ECCOBOND* UF 9000AG

LOCTITE ECCOBOND UF 9000AG is a liquid epoxy capillary underfill (CUF) designed for use with advanced silicon (Si) node flip chip applications. With high filler loading (>70%) and 30% faster flow as compared to other CUFs, *LOCTITE ECCOBOND* UF 9000AG safeguards solder joints against mechanical stress and damage while prioritizing manufacturing efficiency. Proven in volume production with advanced Si node flip chips, *LOCTITE ECCOBOND* UF 9000AG's ultra-low CTE, high T_g, low warpage and MSL3 credentials ensure excellent device protection to enable good electrical reliability performance, while fast flow and excellent workability align with high UPH operations.

KEY FEATURES AND BENEFITS:

- Optimal protection for advanced Si node flip chips
- Balanced formulation delivers high filler loading and volume production capability
- Fast flow: 30% faster versus previous-generation and competitive materials (70 sec. flow on 10mm x 10mm die, 45 µm gap test vehicle)
- Excellent workability: Long stage life at 100°C
- Good, tight fillet formation: Low resin bleed out
- High reliability: High Tg and ultra-low CTE (<20 ppm)

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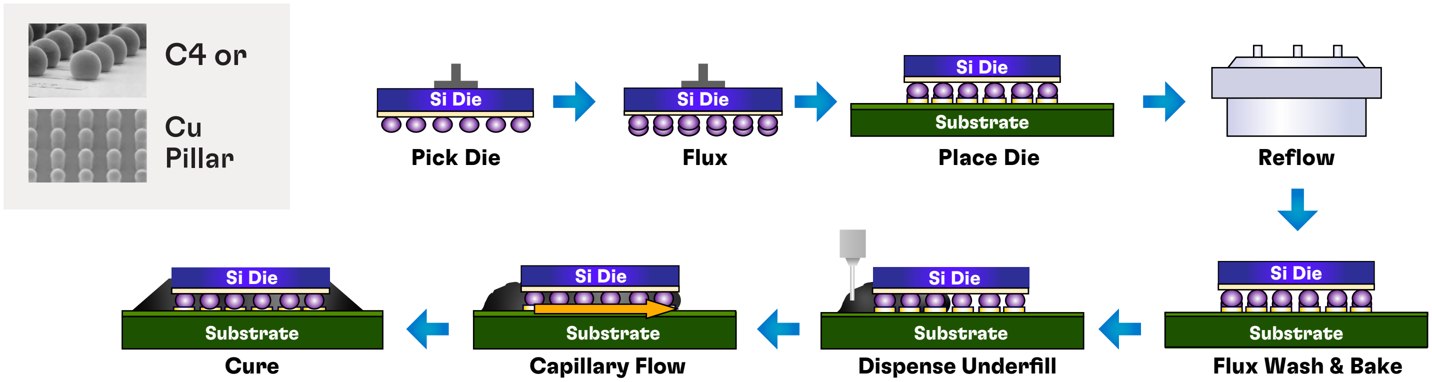
CUF PROCESS



PRODUCT PROPERTIES

Product		*LOCTITE ECCOBOND* UF 9000AG	*LOCTITE ECCOBOND* UF 8000AA	*LOCTITE ECCOBOND* UF 8830S
Feature		Advanced Si node	FCCSP & PoP	FCCSP / autograde
Filler Loading		72%	50%	60%
Filler Size (Max) μm		5	3	3
Viscosity mPa·s (cP) 5 rpm		11,930	4,700	22,120
TI		0.60	0.90	0.85
T_g	**TMA**	135°C	104.4°C	118°C
	DMA	160°C	120.4°C	126.5°C
CTE ($<T_g$/$>T_g$) ppm/°C		19 / 62	30.6 / 120.1	25 / 100
Storage Modulus at 25°C/250°C MPa		14,241 / 377	7,110 / 175	11,081 / 328
Toughness K1c MPa$\sqrt{m}$		3.0	0.6	2.0
Cure Condition		165°C / 2 hr.	150°C / 2 hr.	150°C / 2 hr.

Designing a new device with next-generation chips?

Get in touch with our technology specialists to learn about our portfolio of advanced protection materials.

henkel-adhesives.com/electronics

Scan the QR code above to access the Technical Data Sheet.

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