



BrewerBOND[®] 305

Temporary Wafer Bonding Materials

BrewerBOND[®] 305 temporary wafer bonding materials are organic coatings that enable back-end-of-line (BEOL) processing of ultrathin wafers using standard semiconductor equipment. These products improve throughput, simplify cleaning, and shorten processing time.

Note: Values listed in this data sheet apply to all BrewerBOND[®] 305 materials unless otherwise noted.

BENEFITS

- Backside processing at temperatures up to 300°C
- Mechanical or laser debonding with low force
- Maximize wafer yield with optimized temporary wafer bonding and mechanical or laser debonding process
- Post-bond total thickness variation (TTV) < 2 μm
- Reduced cleaning chemical consumption and time

MARKET SECTORS

- 3-D wafer-level packaging
- MEMS
- Compound semiconductor

MATERIAL PROPERTIES

Thermal Properties

T_d (TGA*): 397°C (Air)

*IPC-TM-650 2.4.24.6 (2% Loss)

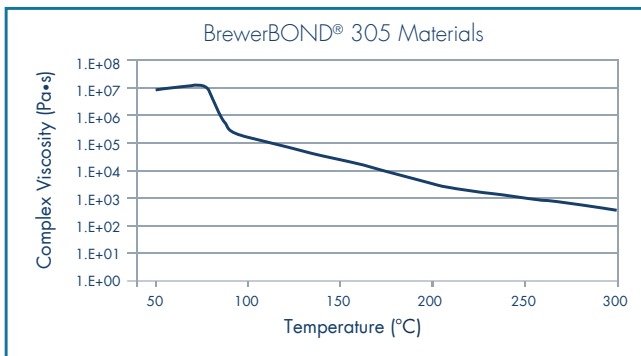
T_g (DSC): 70°C

Viscosity (Brookfield) at 100°F (37.8°C)

BrewerBOND[®] 305 material: 6700 ±200 cP

BrewerBOND[®] 305-30 material: ~3300 cP (tracking)

Melt Viscosity



PROCESSING

Coating Parameters (200-mm substrate)

Dynamic dispense: 60 rpm, accel: 100 rpm/s, 10 s

Spin speed: See spin speed curve for thickness target

| Material | Thickness | Spin (rpm) | Accel. (rpm/s) | Time (s) | Bake 1 | Bake 2 | Bake 3 |
|--------------------------------|-----------|------------|----------------|----------|---------------|----------------|----------------|
| BrewerBOND [®] 305 | ~50 μm | 1000 | 3000 | 30 | 60°C 3 min | 160°C 3 min | 220°C 3 min |
| BrewerBOND [®] 305-30 | ~30 μm | 1000 | 3000 | 30 | 60°C 3 min | 160°C 2 min | 220°C 2 min |

Bonding Process

Temperature: 200°C

Time: 3 min

Vacuum: 5 mbar

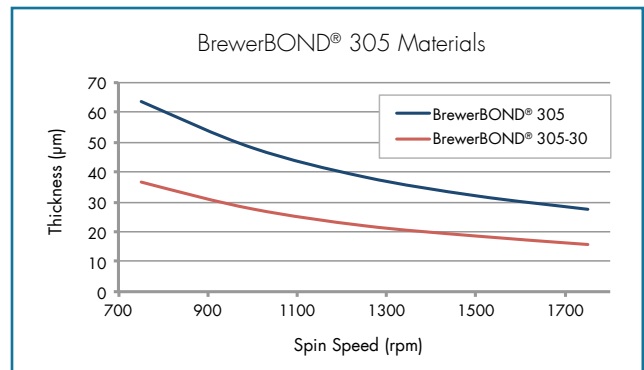
Force: 1800 N

Debonding Process (Mechanical)

Temperature: Room temperature

Force: Process dependent

Spin Speed Curves



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