



# BrewerBOND<sup>®</sup> 220

## Temporary Wafer Bonding Material

BrewerBOND<sup>®</sup> 220 temporary wafer bonding material is an organic coating that enables back-end-of-line (BEOL) processing of ultrathin wafers using standard semiconductor equipment. This product improves throughput, simplifies cleaning, and shortens processing time.

## BENEFITS

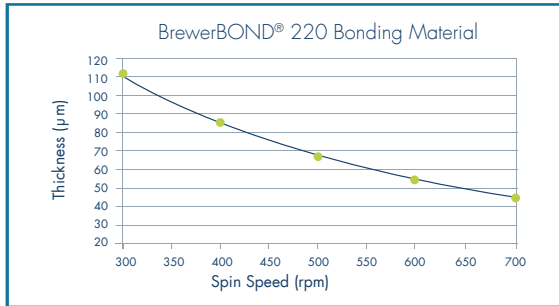
- Enables backside temperature processing at 200°C – 240°C
- Enables slide debonding with low force
- Enables minimal device wafer bowing during processes
- Up to 160- $\mu$ m film possible with a single coat and customized spin process

## MARKET SECTORS

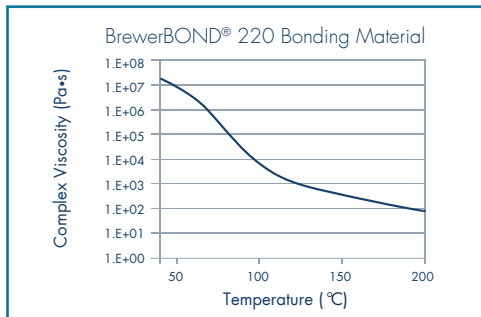
- 3-D wafer-level packaging
- MEMS
- Compound semiconductor

## PROCESSING

### Spin Speed Curve Data



### Melt Viscosity



## PROCESSING

### Coating Parameters (8" substrate)

*Static dispense in center of wafer*

*Spin Speed: See spin speed curve provided for thickness target*

*Acceleration: 500 rpm/s*

*Spin Time: 30 s*

Material	Thickness	Spin (rpm)	Accel. (rpm/s)	Time (s)	Bake 1	Bake 2	Bake 3
BrewerBOND <sup>®</sup> 220	~50 $\mu$ m	650	500	30	80°C 3 min	180°C 3 min	220°C 3 min
BrewerBOND <sup>®</sup> 220	~100 $\mu$ m	350	500	30	80°C 5 min	180°C 5 min	220°C 10 min

*\*all bake conditions proximity*

### Bonding Process (8" substrate)

*Temperature: 130°C*

*Time: 2 min*

*Vacuum: 5 mbar*

*Force: 2100 N*

*Process can be optimized for high-temperature bonding and using various wafer sizes.*

### Slide Debonding Process

*Temperature: 190°C*

*Force: 4 lb*

*Speed: 2 mm/s*

*Can be debonded at temperatures as low as 150°C.*

### Viscosity (Brookfield)

Viscosity (Brookfield) = 1480 cP at 37.8°C

Viscosity (Brookfield) = 2820 cP at 25°C

$T_d$  (TGA\*) = 254°C (Air)

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

$T_g$  (DSC) = 50.1°C

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