Z-COAT 451

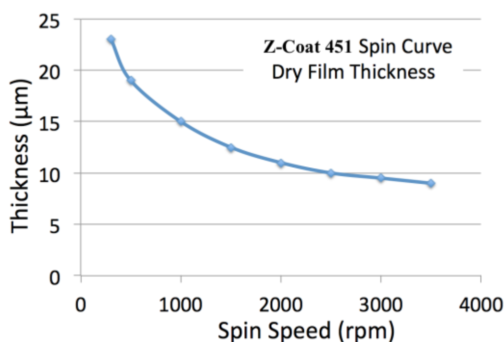
Temporary Wafer Bonding Adhesive for Application up to 450 °C

Z-COAT 451 is a spin on transparent dry film adhesive for wafer temporary bonding application. Z-COAT 451 resists most processing chemicals and is thermally stable up to 450 °C.

Basic Material Property:

Z-COAT 451	
Appearance	Clear
Odor	Slightly
Viscosity	~1000 cps
Solvent	Yes
Thermal	Stable Up to 450℃ in N2
Coating	Spin Coating Preferred, Stencil/Spray Optional
Package	Available in 1 kg and 1 gallon Bottle
Storage	Room Temperature

Spin Coating:



Recommended thickness for bonding is 15~25 µm (at 500 ~ 1000 rpm spin speed).

Hard Bake:

Thickness	Step Baking Schedule
10 ~ 20 µm	80 °C for 2 minutes + 150 °C for 2 minutes + 250 °C for 5 minutes

For applications over 300 °C, an additional 2 minutes 350 °C bake is recommended.

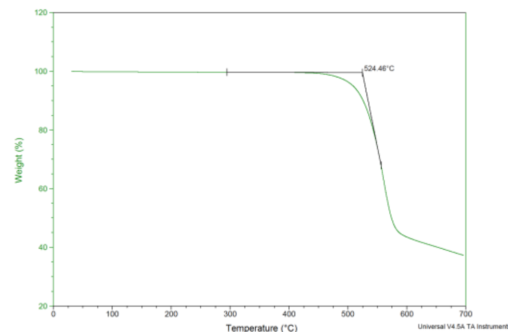
Thermal Mechanical Properties:

Decomposition Temp: > 520 °C
Weight Loss < 0.2% 2 hours at 350 °C
Shear Strength > 800 kPa

Wafer Bonding:

Condition: 300 °C at high vacuum
Force: 600 kg F for 200 mm wafer
300 kg F for 150 mm wafer
150 kg F for 100 mm wafer

Thermo Gravimetric Analysis:



Chemical Resistance Summary:

Chemicals	Test Condition	Result
PGMEA	25 C Soak 30 minutes	Weight Loss less than 1% surface keeps normal
0.045% KOH	25 C Soak 30 minutes	
Al Hydroxide	40 C Soak 60 minutes	
10% Oxalic Solution	47 C soak 60 minutes	
TMAH	25 C Soak 30 minutes	
Stripper	60 C soak 60 mintes	
Hydrofluoric 6N	25 C Soak 30 minutes	
Acetic acid 6N	25 C Soak 30 minutes	
H_2O_2 30%	25 C Soak 30 minutes	
H_2SO_4 6N	25 C Soak 30 minutes	
HCl , Conc	25 C Soak 30 minutes	
$H_2O:NH_4OH:H_2O_2$ (5:1:1)	25 C Soak 30 minutes	
$H_2O:H_2SO_4:H_2O_2$ (8:1:1)	25 C Soak 30 minutes	
Isopropanol	25 C Soak 30 minutes	

Cleaning:

Z-Coat 451 film residue can be easily peeled off or removed by polar aprotic solvent.

Contact:

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