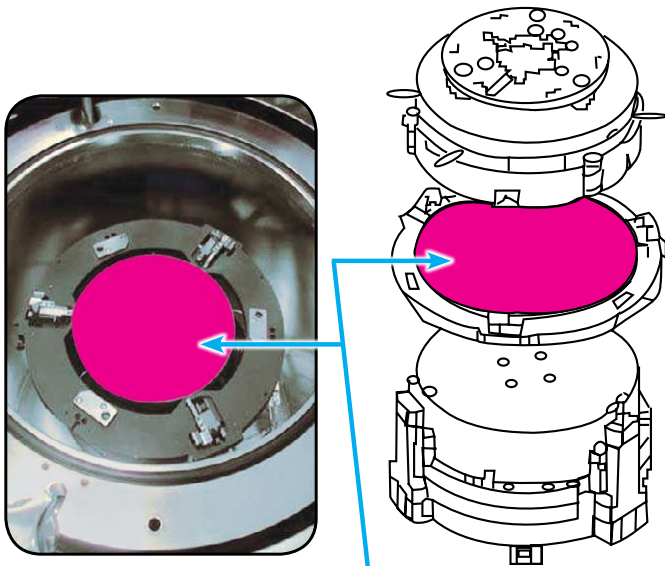


TACTILE PRESSURE INDICATING SENSOR FILM

Application: Wafer Bonding

Pressure^x[®] is a unique, affordable and easy to use tool that reveals the distribution and magnitude of pressure in your wafer bonder.

PRESSUREX[®] FILM IN A WAFER BOND



Place Pressure^x[®] tactile surface sensor here

BENEFITS

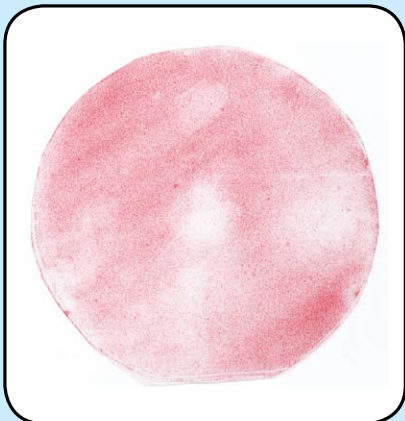
- ▶ Lower incidence of voids
- ▶ Minimize “spill out” into unwanted regions reducing short circuits.
- ▶ Reduce incidence of unbounded wafers
- ▶ More consistent hermetic seals with glass frit bonding
- ▶ Reduce wafer cracking

Pressure^x[®] is used to measure pressure on wafer bonding machines to reveal pressure inconsistencies across the wafer surface. By monitoring both pressure magnitude and distribution within your wafer bonding device with Pressurex wafer defects and can sharply reduced.

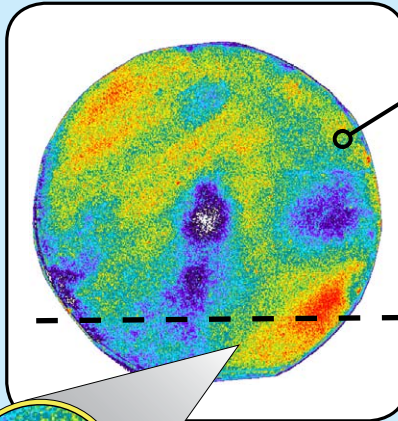
When placed in your wafer bonder, the film instantaneously and permanently changes color in direct proportion to the actual pressure applied. Philosophically similar to the indication given by Litmus paper. Precise pressure magnitude is then easily determined by comparing the resultant color intensity to a standardized color correlation chart. No training or instrumentation is required.

Pressure^x[®] dramatically reveals a complete pressure “map”

STEP 1



STEP 2

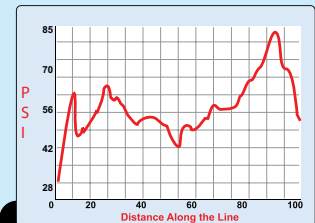


Color Indicates Precise PSI Value

Pressure Statistics

Sample Pseudocolor Rep	
Image:	Sample Pseudocolor Rep
Pressure	
Average	28.050 PSI
Std. Dev	57.93 PSI
Area	0.14 sq.in
Force	39.44 lbf
Minimum	20.319 PSI
Maximum	43.200 PSI
Format :	###

Pressure Profile



Zoomed View

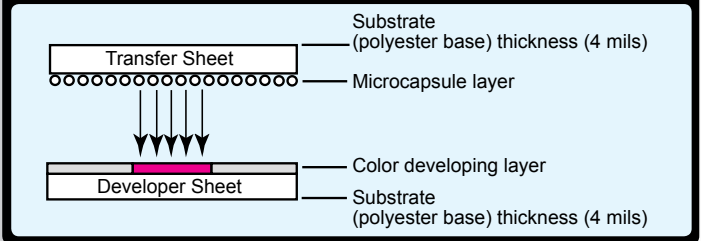
Colorization applied with the Topaq[®] optical analysis system

Tactile Pressure Indicating Sensor Film

Accurate, Cost-effective, Easy to Employ Pressure Mapping Technology

Have you ever needed to evaluate pressure or force between two touching or mating surfaces? Previously, your only choices were strain gauges and load cells, that are time consuming and difficult to interface. Now with Pressurex®, our disposable one-time use pressure film, evaluating surface pressure distribution and magnitude is accurate, quick and highly economical.

CROSS SECTIONAL VIEW OF PRESSUREX® FILM



8 Sensitivities To Accommodate A Wide Range Of Pressures

PRESSURE FILM TYPE	PRESSURE RANGE	
Micro*	2 – 20 PSI	(0.14 – 1.4 kg/cm ²)
Zero (LLLLW)	7.2 – 28 PSI	(0.5 – 2 kg/cm ²)
Ultra Low (LLLW)	28 – 85 PSI	(2 – 6 kg/cm ²)
Super Low (LLW)	70 – 350 PSI	(5 – 25 kg/cm ²)
Low (LW)	350 – 1,400 PSI	(25 – 100 kg/cm ²)
Medium (MS)	1,400 – 7,100 PSI	(100 – 500 kg/cm ²)
High (HS)	7,100 – 18,500 PSI	(500 – 1,300 kg/cm ²)
Super High (HHS)	18,500 – 43,200 PSI	(1,300 – 3,000 kg/cm ²)

*Relative Pressure Distribution Only.

PHYSICAL SPECIFICATIONS

OPERATING TEMPERATURE	41°F to 95°F (5°C - 35°C) <i>(much higher for brief exposure)</i>	SUBSTRATE	Polyethylene Terephthalate (PET)
HUMIDITY RANGE	20% to 90% RH	ACCURACY	±10% visual, ±2% utilizing optional optical measurement systems
GAUGE	4, 8, or 20 mils	SHELF LIFE	2 years
SPATIAL RESOLUTION	5 to 15 microns		

MSDS Available Upon Request.



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