

T2723F

THERMALLY CONDUCTIVE & ELECTRICALLY INSULATIVE FILM

TECHNICAL DATA

October, 2011

Product Description

TechFilm T2723F is a thermally conductive and electrically insulative, B-staged film adhesive. It features a relatively low coefficient of thermal expansion, moderately high glass transition temperature, and good adhesion to various substrates. TechFilm T2723F will cure at temperatures above 90°C.

APPLICATIONS	FEATURES	RECOMMENDED SUBSTRATES
<ul style="list-style-type: none"> Electronic board assembly 	<ul style="list-style-type: none"> Electrically insulative B-staged film Chemical, heat, moisture resistant Thermally conductive Low coefficient of thermal expansion 	<ul style="list-style-type: none"> Stainless steel Brass Copper

CURED PROPERTIES*		
Property	Value	Test Method
Color	Cream	Visual
Specific Gravity	1.85	ASTM D790
Glass Transition Temperature, C	98	ASTM E1356
Thermal Conductivity, W/m-K	0.6	ASTM E1461
Thermal Diffusivity, thickness=1mm, (cm ²)/s-K	0.0026	ASTM E1461
Specific Heat Capacity, J/g-K	1.28	ASTM E1461
Volume Resistivity @25C, Ohm-cm	>2 x 10 ¹⁴	ASTM D257
Weight Loss @ 150C, TGA, 20C/min, N ₂ , %	0.12	ASTM D3850 & MID-STD-883
Weight Loss @ 200C, TGA, 20C/min, N ₂ , %	0.52	ASTM D3850 & MID-STD-883
Dielectric Constant @ 25C, 1kHz	5.2	ASTM D1531/D150
Dielectric Constant @ 25C, 1MHz	4.9	ASTM D1531/D150
Dissipation Factor @ 25C, 1kHz	0.012	ASTM D1531/D150
Dissipation Factor @ 25C, 1MHz	0.055	ASTM D1531/D150

TENSILE SHEAR STRENGTH*		
Property	Value	Test Method
to Aluminum @ 25C, psi	3,550	ASTM D1002
to Nickel @ 25C, psi	1,650	ASTM D1002
to FR4 @ 25C, psi	3,880	ASTM D1002*
to ULTEM @ 25C, psi	940	ASTM D1002*
to 101 Copper @ 25C, psi	3,100	ASTM D1002*
to 316 SS @ 25C, psi	4,250	ASTM D1002*
to 260 Brass @ 25C, psi	3,250	ASTM D1002*

* Tested using 0.125" thick substrates

CURE SCHEDULE*		
Property	Value	Test Method
Cure Time @ 120C, min	120	Typical Cure Schedule
Cure Time @ 130C, min	60	Alternate Cure Schedule
Cure Time @ 150C, min	15	Alternate Cure Schedule
Cure Time @ 165C, min	7	Alternate Cure Schedule

Storage: Store in dry conditions, out of sunlight and in tightly sealed containers.

Shelf Life: Three days @ 20°C Three weeks @ -10°C Three months @ -20°C One year @ -40°C

Revision Number: 3 Date: 11 October, 2011

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CHEMICAL RESISTANCE TABLE*		
Solvent	Weight Gain (+) Loss (-) after 24hrs @ 25C, (%)	Weight Gain (+) Loss (-) after 48hrs @ 50C, (%)
Water/antifreeze	1.5	2.4
Transmission fluid	1.1	1.4
Antifreeze	0.7	1.4
Salt Water, 1.4M	1.8	2.8
Tap Water	2.3	3
Deionized Water	1.9	3.1
Ferric Nitrate/Water, pH2	2.2	2.9
Sodium Hydroxide / Water, pH12	2.2	2.8
Solution of 1 M Methanol, 1M Sulfuic Acid in Water	7.4	3.1
N-Methyl-2-pyrrolidone	Not Recommended	Not Recommended
Acetone	24.8	22.7
Isopropyl Alcohol	0.1	14.9
Alconox Water, Saturated solution	2.1	2.6
10 to 15 psi Steam, @ >100C	2.5	_____

*All samples were 0.005 to 0.007 inches thick, 1 inch wide and 3 inches long. A modified ASTM D570 testing procedure was used. Due to the thin samples, used adsorption numbers may be artificially inflated when compared to industrial standards for measuring chemical resistance.

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