

## TF E2214F

### ELECTRICALLY CONDUCTIVE FILM

#### TECHNICAL DATA

October, 2011

#### Product Description

TechFilm E2214F is a high performance electrically conductive B-staged film adhesive specially formulated for bonding to gold or gold plated substrates. TechFilm E2214F is especially suited for EMI/RF grounding applications. This product will cure at temperatures above 120C and features good chemical, heat, and moisture resistance.

APPLICATIONS	FEATURES	RECOMMENDED SUBSTRATES
<ul style="list-style-type: none"> <li>EMI/RF grounding</li> </ul>	<ul style="list-style-type: none"> <li>Electrically conductive</li> <li>B-staged film</li> <li>Chemical, heat, moisture resistant</li> </ul>	<ul style="list-style-type: none"> <li>Gold</li> <li>Gold plated substrates</li> </ul>

CURED PROPERTIES*		
Property	Value	Test Method
Glass Transition Temperature, C	106 (inflection)	ASTM E1356
Volume Resistivity at 25°C, Ohm-cm	1.0 x 10 <sup>-4</sup>	TFTEST004C
Volume Resistivity at 25°C, Ohm-cm after 1000 hr at 150°C	0.7 x 10 <sup>-4</sup>	TFTEST004C
Thermal Conductivity, W/m-K	1.3	ASTM E1461
Thermal Diffusivity, cm <sup>2</sup> /s-K	0.0055	ASTM E1461
Specific Heat Capacity, J/g-K	0.56	ASTM E1461
Linear Coefficient of Thermal Expansion, x 10 <sup>-6</sup> (-)/C	Alpha 1 (below Tg): 57	ASTM E831
	Alpha 2 (above Tg): 347	ASTM E831
Weight Loss, TGA, 20C/min, N <sub>2</sub> , %	@ 150C: 0.21	ASTM D3850, MIL-STD-883 Section 3.8.5.1
	@ 200C: 0.23	
	@ 300C: 0.42	
Space Simulated Outgassing, TML	0.228%	ASTM E595
Space Simulated Outgassing, CVCM	0.031%	ASTM E595
Space Simulated Outgassing, WVR	0.080%	ASTM E595

TENSILE SHEAR STRENGTH*		
Property	Value	Test Method
to Aluminum @ 25C, psi	2150	ASTM D1002
to Nickel @ 25C, psi	1700	ASTM D1002
to Gold @ 25C, psi	1700	ASTM D1002

CURE SCHEDULE*		
Property	Value	Test Method
Cure Time @ 150C, min	60	Typical Cure Schedule
Cure Time @ 160C, min	30	Alternate Cure Schedule
Cure Time @ 130C, min	240	Alternate Cure Schedule

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

**Shelf Life:** One week @ 20C One month @ 10C Three months @ -30C One year @ -40C

Revision Number: 2-New Address Date: 11 Oct, 2011

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<b>IONICS*</b>		
Property	Value	Test Method
Total Ionic Conductance after 72hr	15	TFTEST007
pH @ 25C after 72hr water boil, ppm	7.3	TFTEST010
Ionics, IC after 72 hr water boil, ppm	Chloride: 100	ASTM D4327
	Potassium: 10	ASTM D4327
	Sodium: 35	ASTM D4327
	Fluoride: <5	ASTM D4327
	Ammonium: 50	ASTM D4327
	Other: <5	ASTM D4327

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