

# Thermal Transfer Printable Polyimide 2 mil HIGHLY DURABLE WHITE

## **Description:**

Stranco S-432 is a 2 mil (50 $\mu$ ) polyimide film with a high-temperature permanent pressure sensitive acrylic adhesive and a high opacity, high gloss white topcoat specifically designed for thermal transfer printing.

## **Properties:**

The S-432 topcoat, in combination with the appropriate thermal transfer ribbon, passes the requirements of **MIL-STD-202G, NOTICE 12, Method 215K** and **MIL-STD-883E, Notice 4 Method 2015.13**. This new durable top coat withstands highly active fluxes (ORH1) and will resist abrasion at elevated temperatures.

## **Applications:**

- High-temperature-lead-free solder applications.
- PCB identification
- Applications that use of highly active fluxes
- IC labeling for work in process, permanent ID & warranty labeling
- Component tracking
- Applications where the label will be contacted directly at elevated temperatures

## **Special Considerations:**

- The surface that you want to label should be clean, dry and free of any surface contamination, such as dust, oil or rust. Isopropyl alcohol would be a recommended solvent to clean the surface.
- When you apply the label, you must use firm pressure to increase the physical contact of the adhesive with the surface of the product.
- Pressure sensitive adhesives will provide stronger bonds to a warm surface, as compared to a colder one. The adhesive will 'flow' more readily, increasing the surface area and increasing the adhesion peel strength.
- The S-432 top coat & print can be contacted while exposed to elevated temperature.
- Preheating the labeled product can further enhance print permanence in the case of extreme solvent and/or abrasion exposure, although this is not typically required for board processing applications.
- All values shown are averages and should not be used for specification purposes. Adhesion and tack values have a 15% tolerance allotted to the above values stated.
- Test data and test results contained in this document are for general information only and shall not be relied upon by Stranco customers for designs and specifications, or be relied on as meeting specified performance criteria.



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## Technical Data

PROPERTIES	TEST METHODS	AVERAGE RESULTS	
		USA Units	SI Units
<b>Thickness</b>	<b>ASTM D1000</b>		
-Face sheet		0.0025 inch	0.064 mm
-Adhesive		0.0020 inch	0.051 mm
-Total		0.0045 inch	0.115 mm
<b>Adhesion</b>	<b>80313</b>		
-Stainless Steel	<b>20 minute dwell</b>	≥ 35 oz/in	33N/100 mm
	<b>24 hour dwell</b>	≥ 40 oz/in	43N/100 mm
<b>Tack</b>	<b>80155</b>	≥ 1000 g/in	
<b>Temperature Rating:</b>	<b>Long term</b>	100 hours at 302°F (150°C)	
	<b>Operating</b>	5 minutes at 500°F (260°C)	
	<b>Short term</b>	90 seconds at 572°F (300°C)	
<b>Shelf Life</b>	<b>1 year below 80°F (27°C) and 60% R.H.</b>		
<b>UL File #</b>	PGJ12. MH19503		
<b>UL Tested ribbons</b>	Ricoh B110CR, Armor AXR 7+, ITW B324, DNP R510HF		

## Durability Testing

Properties	Test Methods	Test Environment	PCS <sup>1</sup>	Read Rate <sup>2</sup>
<b>Heat / Chemical</b>	<b>80386</b>	Control 70°C	99%	100%
		Alpha Metals Inc. 2110 Saponifier 10% aqueous, 70°C, 5 min.	97%	100%
		Isopropanol 99%, 70°C, 5 min.	99%	100%
		Kyzen XJN 30%, 70°C, 5 min.	99%	100%

## Chemical Testing

Properties	Test Method	Test Fluid	Results
<b>Chemical Resistance</b>	<b>MIL-STD-202G, Notice 12, Method 215K</b>		
	<b>MIL-STD-883E, Notice 4, Method 2015.13</b>		
		Solvent A-1part IPA, 3 parts Mineral Spirits	No visible effect
		Solvent B- 1,1,1 Trichloroethane	Solvent deleted per notice 12
		Solvent C- Terpene Defluxer	No visible effect
		Solvent D- Saponifier	No visible effect
<b>Zestron</b>	<b>Reflow &amp; Non-Reflow prior to cleaning</b>	Vigon A201 20%	No visible effect
		Vigon N600 20%	No visible effect

## Material Compliance

<b>RoHS- Restriction of Hazardous Substances (EU Directive 2002/95/EC)</b>	Limits set forth in Directive 2005/618/EC amending Directive 2002/95/EC
<b>REACH- Registration Evaluation and Authorization of Chemicals (EU Directive 1907/2006/EC)</b>	Limits set forth in Directive 1907/2006/EC Article 7 (2)
<b>Halogens- Restriction use of Halogen (IEC 61249-2-21)</b>	Limits set forth in International Electrochemical Commission

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**Key for the Tables on page 2**

- All SI units are mathematically derived from U.S. conventional units.
- Labels printed with recommended thermal transfer ribbon. Labels printed with 6.7 mil X dimension bars at 2:5 ratio. Labels exposed to indicated environments.
- PCS<sup>1</sup>- Print Contrast Signal. PCS determined with Quick Check 650, 0.0005" aperture, 660 nm wavelength
- Quick check 650 manufactured by: Photographic Sciences Corp.
- <sup>2</sup> Read rate determined using a PSC Quick Check 850 laser scanner

**Trademarks:**

XJN & Aquanox™ is a trademark of Kyzen Corporation.

**References:**

ASTM: American Society for Testing and Materials (U.S.A.)  
SI: International Systems of Units.



**WARRANTY-LIMITATION**

Stranco's products are sold with the understanding that the buyer will test them in actual use and determine for him/herself their adaptability to his/her intended uses. Stranco warrants to the buyer that its products are free from defects in material and workmanship, but limits its obligation under this warranty to replacement of the products shown to Stranco's satisfaction to have been defective, provided that the Buyer has complied with the handling, storage and shelf life requirements as specified by Stranco in applicable materials specifications.

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