



# Low Outgassing Polyester Tape

## 8333

Technical Data

October, 2005

*Supersedes September, 1998*

### Product Description

A metalized polyester tape ideal for the demanding requirements of hard disk drive and related electronics manufacturing. The 1 mil metalized polyester backing offers low static and low diffusivity, complimented with a low outgassing, acrylic adhesive. This product offers a high level of permanence, yet is cleanly removable from most substrates even after extended heat treatments.

### Construction

Backing	Adhesive	Color
Metalized Polyester	Acrylic	Silver

### Typical Physical Properties and Performance Characteristics

**Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.**

		ASTM Test Method
Adhesion to Steel:		D-3330
Initial	31 oz./in.	
After 30 hrs @ 72°F	34 oz./in.	
After 30 hrs @ 120°F	38 oz./in.	
After 30 hrs @ 150°F	42 oz./in.	
Adhesion to Aluminum:		D-3330
Initial	29 oz./in.	
After 30 hrs @ 72°F	30 oz./in.	
After 30 hrs @ 120°F	34 oz./in.	
After 30 hrs @ 150°F	39 oz./in.	
Shear Strength:		D-3654
0.5 in. x 0.5 in. w/1000 gm load	> 200 min.	
Mechanical Performance:		D-3659
Tensile Strength	27 lb./in.	
Elongation @ Break	120%	
Yield Point (%)	10%	
Yield Point (lbs./in.)	16 lb./in.	
Caliper:		D-3652
Backing	1.0 mil	
Adhesive	1.0 mil	
Total	2.0 mil	
Static <sup>1</sup> :	< 100 volts	
NASA Outgassing:		E-595
Total Mass Loss (TML)	0.43%	
Condensable Materials (CVCM)	0.05%	
Water Vapor Recovered (WVR)	0.21%	

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## Typical Physical Properties and Performance Characteristics (continued)

**Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.**

		ASTM Test Method
Outgassing by Headspace GC Analysis <sup>2</sup> (units = µg/cm <sup>2</sup> )		
Hydrocarbons	< .05 µg/cm <sup>2</sup>	D-4526 <sup>3</sup>
Acrylates	< .20 µg/cm <sup>2</sup>	
Organic Acids	< .05 µg/cm <sup>2</sup>	
Alcohols & Esters	< .05 µg/cm <sup>2</sup>	
Siloxanes	< .02 µg/cm <sup>2</sup>	
Anions by Ion Chromatography (units = ng/cm <sup>2</sup> )		
Fluoride	not detected	
Chloride	< 50 ng/cm <sup>2</sup>	
Nitrite	not detected	
Bromide	not detected	
Nitrate	not detected	
Phosphate	not detected	
Sulfate	not detected	

<sup>1</sup>Static = Residual voltage on surface of tape after unwind @ 12 in./min. as measured by 3M Model 709 static sensor.

<sup>2</sup>Outgassing = Dynamic headspace analysis of volatile components collected during a 4 hr @ 80°C heat cycle using a Hewlett-Packard Model 5890 Series II gas chromatograph coupled with a Hewlett-Packard Model 5989B mass spectrometer.

<sup>3</sup>ASTM test method modified per footnote #2 above.

## Application Ideas

- Temporary porthole sealing of hard disk drive clamshells.
- General purpose cleanroom applications.
- Other applications which require a low outgassing polyester film tape.

## Key Attributes

Features	Advantages	Benefits
<ul style="list-style-type: none"> <li>• 1 mil metalized polyester backing</li> </ul>	<ul style="list-style-type: none"> <li>• Thin, high strength</li> <li>• Bleeds static charge rapidly</li> </ul>	<ul style="list-style-type: none"> <li>• Helps reduce breakage</li> <li>• Helps reduce risk of product damage due to electrostatic discharge</li> </ul>
<ul style="list-style-type: none"> <li>• High purity acrylic adhesive</li> </ul>	<ul style="list-style-type: none"> <li>• Low diffusivity</li> <li>• Low water vapor transmission rate</li> <li>• Low outgassing</li> <li>• Low extractable ionic content</li> <li>• Clean removability from a wide variety of substrate materials</li> <li>• Excellent initial adhesion</li> <li>• Long aging</li> </ul>	<ul style="list-style-type: none"> <li>• Effective contamination barrier</li> <li>• Effective barrier for water vapor</li> <li>• Helps reduce risk of chemical contamination</li> <li>• Helps reduce risk of chemical contamination</li> <li>• Eliminate cleanup of substrate materials during rework operations</li> <li>• Adhesive has good tack properties for easy application</li> <li>• Adhesive stable over long periods of time</li> </ul>

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## General Information

- Best results obtained using firm rubdown pressure on clean, oil-free substrate materials.
- Dimensionally stable over temperature range from -60°F to 300°F (-51°C to 149°C).
- Standard packaging includes plastic cores and individual plastic bags.
- Shear performance decreases with increasing temperature.

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## Shelf Life

18 months from manufacture of material if properly stored at 60-80°F (16-27°C) and 40-50% relative humidity.

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## For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M Electronics Markets Materials Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-634-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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