



# Very Low Outgassing Lined Polyester Tape

## 6690

Technical Data

October, 2005

### Product Description

A metalized polyester tape ideal for the demanding requirements of hard disk drive and related electronics manufacturing. The 2 mil metalized polyester backing offers low static and low diffusivity, complimented with a very low outgassing, high shear, acrylic adhesive. This product offers a high level of permanence, yet is cleanly removable from most substrates even after extended heat treatments. The 3M proprietary fluoropolymer liner provides premium release without the risk of silicone contamination.

### Construction

Backing	Color	Adhesive	Liner
Metalized polyester	Silver	Acrylic	Non-silicone polyester

### 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	27 oz./in.	
After 30 hrs @ 72°F	31 oz./in.	
After 30 hrs @ 120°F	52 oz./in.	
After 30 hrs @ 150°F	75 oz./in.	
Adhesion to Aluminum:		D-3330
Initial	33 oz./in.	
After 30 hrs @ 72°F	40 oz./in.	
After 30 hrs @ 120°F	50 oz./in.	
After 30 hrs @ 150°F	55 oz./in.	
Shear Strength:	@ 25°C	D-3654
1/2" x 1 " w/250 gm load	> 10,000 min.	
1/2" x 1 " w/1750 gm load	> 10,000 min.	
1/2" x 1 " w/1000 gm load	> 10,000 min.	
1" x 1 " w/1816 gm load	> 10,000 min.	

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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
Mechanical Performance:		D-3659
Tensile Strength	52 lb./in.	
Elongation @ Break	120%	
Yield Point (%)	5.5%	
Yield Point (lbs./in.)	33 lb./in.	
Liner Release:		TM-1717
Liner release force	8 gm/in	
Caliper:		D-3652
Backing	2.0 mil	
Adhesive	1.0 mil	
Total	3.0 mil	
Liner	2.0 mil	
Outgassing by Headspace GC Analysis <sup>2</sup> (units = µg/cm <sup>2</sup> )		D-4526 <sup>3</sup>
Hydrocarbons	< .05 µg/cm <sup>2</sup>	
Acrylates	< .05 µg/cm <sup>2</sup>	
Organic Acids	< .02 µg/cm <sup>2</sup>	
Alcohols & Esters	< .05 µg/cm <sup>2</sup>	
Siloxanes	not detected	
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	
Release Liner		
Backing:	Clear polyester film	
Coating:	3M proprietary fluoropolymer coating (one side)	
Thickness:	2.0 mil (50 micron)	
Silicone:	0% silicone atoms detected by surface analysis using electron spectroscopy component analysis (ESCA)	

<sup>1</sup>3M internal test method measures release force required to remove liner, 180° @ 90"/min.

<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

- Perimeter sealing of hard disk drive clamshells.
- Temporary/permanent sealing of portholes in hard disk drive clamshells.
- General purpose sealing.
- Other applications, which require a very low outgassing metalized polyester, tape.

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Key Attributes	Features	Advantages	Benefits
	<ul style="list-style-type: none"> <li>• 2 mil metalized polyester backing</li> <li>• High purity acrylic adhesive</li> <li>• Non-silicone release liner</li> </ul>	<ul style="list-style-type: none"> <li>• Tough, high modulus backing</li> <li>• Bleeds static charge rapidly</li> <li>• Low diffusivity</li> <li>• Very low outgassing</li> <li>• Low extractable ionic content</li> <li>• Acrylic acid-free adhesive formulation</li> <li>• Clean removability from a wide variety of substrate materials</li> <li>• Excellent shear strength</li> <li>• Long aging</li> <li>• Non-silicone release chemistry</li> </ul>	<ul style="list-style-type: none"> <li>• Abrasion/tear resistant</li> <li>• Helps reduce risk of product damage due to electrostatic discharge</li> <li>• Effective contamination barrier</li> <li>• Helps reduce risk of chemical contamination</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>• Helps reduce chance of slippage when shear stress is applied</li> <li>• Adhesive performance stable over long periods of time</li> <li>• Helps reduce risk of siloxane contamination</li> </ul>
<b>General Information</b>	<ul style="list-style-type: none"> <li>• Best results obtained using firm rubdown pressure on clean, oil-free substrate materials.</li> <li>• Dimensionally stable over temperature range from -60°F to 300°F (-51°C to 149°C).</li> <li>• Standard packaging includes plastic cores and individual plastic bags.</li> <li>• Shear performance decreases with increasing temperature.</li> </ul>		
<b>Shelf Life</b>	Two years from manufacture of material if properly stored at 60-80°F (16-27°C) and 40-50% relative humidity.		

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### Precautionary Information

Refer to Product Label and Material Safety Data Sheet for health and safety information before using this product. For additional health and safety information, call 1-800-364-3577 or (651) 737-6501.

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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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### Product Use

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