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Technical Data | July 2021

3M™ Low Static Polyimide Film Tape 5419

Product Description

3M™ Low Static Polyimide Film Tape 5419 is a translucent, polyimide film-backed silicone adhesive tape with unique and extremely low electrostatic discharge properties.

Features

- Employs a proprietary technology that results in extremely low electrostatic discharge at unwind and removal from the PWB. Conventional polyimide tapes can typically generate over 10,000 volts during use which can damage board mounted electronic components. 3M Low Static Polyimide Film tape 5419 overcomes this problem without any of the typical drawbacks of conventional “anti-static” or “static-free” tapes (e.g. variable adhesion and opaqueness).
- At room temperature the properties of polyimide and polyester film are similar. However, as the temperature increases or decreases, the properties of the polyimide film are less affected than polyester.
- Polyimide film does not soften at elevated temperatures, thus, the film provides an excellent release surface at elevated temperatures
- Gold tab protection during wave solder of printed circuit boards.
- RoHS compliant.

Product Construction/Material Description

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

Backing	Adhesive	Color	Standard Roll Length
Polyimide	Silicone	Gold	36 yds (33 m)

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. Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the commercialized product.

3M™ Low Static Polyimide Film Tape 5419		
Property	**Value**	**Method***
Adhesion to Steel:	20 oz./in. width (22 N/100 mm)	D-3330
Tensile Strength at Break:	33 lbs./in. width (578 N/100 mm)	D-3759
Elongation at Break:	60%	D-3759
Backing Thickness:	1.0 mil (0.03 mm)	D-3652
Total Tape Thickness:	2.7 mil (0.07 mm)	D-3652
Temperature Use Range:	-73° to 260°C (-100° to 500°F)	
Dielectric Strength:	7000 volts	D-149
Insulating Resistance:	>1*10^6 ohms	
Static Charge: (measured at 50% RH, **70**°F(21°C) in an ESD controlled environment)	Removal from roll: <150 volts Removal from PWB: <50 volts	
Outgassing:	%TLM = 0.58, %CVCM = 0.24	E-595

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Flame Retardancy:	Pass	Per UL-510 Product category: OARC2 File E230409

*Methods listed as ASTM are tested in accordance with the ASTM method noted
*Disclaimer if applicable to chart above

Applications

- Mask for printed circuit boards during wave solder or solder dip process
- Used as release surface in fabrication of parts cured at elevated temperatures

Storage and Shelf Life

The shelf life of 3M™ Low Static Polyimide Film Tape 5419 is 3 years from the date of manufacture when stored in the original packaging materials and stored at 16 to 27°C (60° to 80°F) and 40-50% relative humidity.

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is manufactured and deemed commercially available from 3M. The COA contains the 3M test methods, specifications limits and test results for the product's performance attributes that the product will be supplied against. Contact your local 3M representative for this product's COA.

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Safety Data Sheet: Consult Safety Data Sheet before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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