

3M™ Low Static Polyimide Film Tape 5419

Product Description

3M™ Low Static Polyimide Film Tape 5419 features a high-performance polyimide film backing with a silicone adhesive and extremely low electrostatic discharge properties. This tape is designed for PCB solder masking and other high-temperature applications up to 260°C (500°F). This product is gold in color and has a thickness of 2.7 mil (69 microns).

Key Features

- Electrostatic discharge (ESD) coating helps reduce static during unwind and removal
- Helps protect board-mounted electronic components from static damage
- Delivers low-static performance without variable adhesion or opacity
- Polyimide film stays stable at high temperatures
- Provides a reliable release surface in high temperature applications
- Dimensional stability helps reduce rework and potentially improve productivity
- Silicone adhesive helps reduce adhesive transfer and cleaning
- Flame retardant, chemical and radiation resistant

Product Construction

Polyimide Film Backing: 1.0 mil
Silicone Adhesive: 1.7 mil

Material Description

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

3M™ Low Static Polyimide Film Tape 5419	
Property	Value
Backing	High-Performance Polyimide Film
Adhesive	Silicone
Color	Gold
Standard Roll Length	33 meters (36 yards)

Applications

- Masking or protecting residue-sensitive areas on printed circuit boards (PCBs) during high-temperature operations, such as wave soldering and solder reflow
- Release surface in fabrication of parts cured at elevated temperatures

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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 product's Certificate of Analysis (COA) that is provided once the product is approved by 3M for general commercialization and development work is completed.

3M™ Low Static Polyimide Film Tape 5419		
Property	Test Method*	Value
Adhesion to Steel	D-3330	20 oz/in width (22 N/100 mm)
Tensile Strength at Break	D-3759	33 lb/in width (578 N/100 mm)
Elongation at Break	D-3759	60%
Backing Thickness	D-3652	1.0 mil (0.03 mm)
Total Tape Thickness	D-3652	2.7 mil (0.07 mm)
Temperature Use Range**	3M Test Method	-73° to 260°C (-100° to 500°F)
Dielectric Strength	D-149	7,000 Volts
Insulating Resistance	D-257	>1*10 ⁶ ohms
Static Charge***	3M Test Method	Removal from roll: <150 volts Removal from PCB: <50 volts
Outgassing	E-595	%TLM = 0.58, %CVM = 0.24
Flame Retardancy	Per UL-510 product category: OARC2, File E230409	Pass
Government Specification	ASTM D5213 Type 1, Class A (replaces obsolete MIL-P-46112B)	Pass

*Methods listed as ASTM are tested in accordance with the ASTM method noted

**Temperature use range is defined as the maximum time at the stated temperature after which the tape may be removed cleanly, without staining, from a copper substrate

***Static charge is measured at 50% RH, 21°C (70°F) in an ESD controlled environment

Storage and Shelf Life

The shelf life of 3M™ Low Static Polyimide Film Tape 5419 is 36 months from the date of manufacture when stored in original packaging materials and stored at 16° to 21°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 products performance attributes that the product will be supplied against. Contact your local 3M representative for this product's COA.

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

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