



# 42 Anti-Static

## High Temperature Masking Tape

### Data Sheet

3M™ 42 Anti-Static High-Temperature Masking Tape represents a breakthrough in PSA tape technology. This tape, which generates less than 50 volts on unwind and removal from a wide range of substrates, is designed specifically for use in printed circuit board high-temperature solder applications to mask gold fingers and other components populating the board. It is especially suited for wave solder, dip and drag solder machines and hand-soldering applications as it helps prevent ESD damage to sensitive electronic components in manufacturing environments.

#### Superior Performance

Use new 42 tape at static safeguarded workstations as part of your total static control program to mask, hold or protect sensitive electronic components. The unique anti-static adhesive neutralizes triboelectrically generated charges at the instant of separation of surfaces. It generates very low levels of static charge even in dry conditions of 10% RH. Opaque with gold tint for easy identification and differentiation from standard high temperature tapes, 42 tape has a 1-mil polyimide backing with an exclusive anti-static acrylic pressure sensitive adhesive. Plastic anti-static cores are available to minimize particulate contamination in clean work areas.

#### Masking Removal

When used in high-temperature applications, 42 tape should be removed by pulling the tape off, back over itself 180 degrees. The substrate should also be allowed to cool to room temperature.

Call 1-800-676-8381 for more information or the name of your nearest 3M Electrical Products Division authorized distributor.

Typical Properties	Test Method	Typical Value	
<b>Static Charge Generation</b>			
		<b>10% R.H.</b>	<b>50% R.H.</b>
Removal from roll, 12 in./sec., volts	3M ETM 59134	20	5
Residual charge on substrate, Removal from stainless steel 12 in./sec., volts	3M ETM 59135	50	5
Surface Resistance ohms Tape @ 10% R.H.	EOS/ESD Assoc. STD 11.11		>1 x 10 <sup>5</sup> >1 x 10 <sup>11</sup>
<b>Outgassing Properties</b>			
Total Mass Loss (TML)	ASTM E-595		<1.6%
Collected Volatile Condensable Material (CVCM)	ASTM E-595		<0.1%
<b>Chemical Properties</b>			
Contact Corrosiveness	FTMS 101C Method 3005		
Copper			Pass
Aluminum			Pass
Stainless Steel			Pass
Silver			Pass
Tin Lead			Pass
Kovar			Pass
<b>Typical Tape Properties</b>			
Application Temperature Range Upper Temperature (<500°F, 260°C)	Dwell Time, Sec.		>40°F (5°C) 5
Thickness, total mils	ASTM D-1000		2.2
Unwind force from the core, oz./inch	ASTM D-1000		30
Dielectric Strength, volts	ASTM D-1000		7,000
Break Strength, lbs./inch	ASTM D-1000		28
Slit width tolerance, inch	ASTM D-1000		± 1/64
Adhesion to Steel, oz/inch	ASTM D-1000		15

# 3M™ 42 Anti-Static High Temperature Masking Tape

This tape meets all of the requirements for wave solder applications for modern PCB designs.

Features	Advantages	Benefits
Anti-Static Adhesive	Low triboelectric charge	Eliminate ESD as a potential source of damage and increase production yields  Compliance with E.I.A. Standard 625 which calls for less than 200 volts within 12 inches of a PCB.
Water Based Adhesive	No solvents needed	No residue is left after normal removal from a substrate but if so it can be cleaned with water.  No need for solvent cleaning.
Opaque w/Gold Tint	Unique color	Easy identification and differentiation from standard high temperature tapes.
Polyimide Backing	Withstand high temperatures	Reliable backing for use in wave solder temperatures up to 260°C (500° F)
Adhesive Design	Low outgassing	Can be used for clean room applications
Chemical Properties	No corrosion	PCBs can be masked without fear of corrosion.

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