



# Technical Data Sheet

## 0.004" StencilMate™ Semi-Permanent PCB Stencils

### GENERAL DESCRIPTION

StencilMate™ stencils are made from two layers of clear amber polyimide film with an adhesive backing. It is coated with an aggressive permanent acrylic adhesive and backed with a 50# Kraft release liner. The StencilMate stencils are pre-scored to allow for easy removal of the release liner.

### USES

Intended for use as a “remain-in-place” stencil for the application of solder paste or flux on printed circuit boards. The stencil material is designed to withstand high temperatures and harsh chemicals and . Withstand surface mount circuit board processes. This high-performance material is designed for applications requiring excellent solvent and heat resistance. StencilMate™ stencils are designed with a permanent adhesive and they are not designed to be removed after being applied.

### FEATURES

Excellent chemical, and heat resistance. The StencilMate™ stencil is dimensionally stable (no shrinkage) with a high-performance adhesive. StencilMate™ stencils have insulative properties in the material and adhesive. The minimum break through voltage (the voltage that will not pass through the polyimide) is 5000 volts. The voltage that will pass through the polyimide material is approximately 7000 volts.

### PHYSICAL PROPERTIES

#### THICKNESS

Material	Convention Units	S.I. Units
Polyimide	2.0 mils	51 microns
Adhesive	2.0 mils	51 microns
Liner (50#)	3.0 mils	75 microns
Total	7.0 mils	177 microns

**(Results in a solder print thickness of 0.004")**

#### ADHESIVE PERFORMANCE

Stainless Steel	72.00 oz/in	790.00 N/m
Fiberglass	28.98 oz/in	317.32 N/m
Phenolic	29.97 oz/in	328.17 N/m
Nylon	40.55 oz/in	444.01 N/m

**(Adhesive performance after a 72 hour dwell)**

#### SERVICE TEMPERATURES

1-40 minutes	572°F	300°C
2-4 minutes	617°F	325°C
1-9 seconds	842°F	450°C
1-3 seconds	1000°F	538°C

#### APPLICATION TEMPERATURE

Minimum	50°F	10°C
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#### CHEMICAL RESISTANCE

Test should be conducted at room temperature after 24 hour dwell. Testing should consist of five cycles of 10 minute immersions in the specified chemical reagent followed by 30 minute recovery periods. Cotton swab rub prior to final immersion.

Household Cleaners	No effect
Mild Acid	No effect
Oil	No effect
Water	No effect
1 Part IPA, 1 Part Mineral Spirits	No effect
Terpene Defluxer	No effect
Toluene	No effect
Saponifier	No effect

#### STORAGE STABILITY

Product should be stored at 70 degrees F (21 degrees C) and 40 – 50% relative humidity to ensure optimal performance.

#### SHELF LIFE

2 Years at the proper storage conditions.