

LOCTITE M 3000-1RS E&C

March 2016

PRODUCT DESCRIPTION

LOCTITE M 3000-1RS E&C provides the following product characteristics:

Technology	Vinyl
Appearance	Black
Product Benefits	- One component - Processing Ease - Screen printable for reduction in circuit profile and production
Cure	Heat cure, Hot air drying or Infrared
Application	Conductive Ink
Diluent	Carbitol acetate

LOCTITE M 3000-1RS E&C is a series of graphite based, screen printable inks that can be blended together for a custom fixed resistor on flexible substrates such as polyester and polyimide. These inks are specifically designed for the application of resistive trace and fixed resistors on polyester and other flexible membrane materials.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - HBT, 25 °C, mPa·s (cP):

Spindle 14	35,000
Solids Content by Weight, %	45
Density, g/cm ³	1.3
Shelf Life @ 25 °C (from date of qualification in original seal), days	365
Flash Point, °C	70

TYPICAL SCREEN PRINTING PROCESS

Screen mesh:

Stainless steel	200
Polyester screen	196
Minimum mesh opening, %	33
Squeegee Hardness, durometer	70
Squeegee Speed (not to exceed), cm/second	10
Squeegee pressure, initial, Kg	3
Snap-off, snap-off determined by PCB size, initial from 60 surface of substrate, mil	
Wet Film Thickness, µm	30 to 40
Cured Film Thickness, µm	10 to 14
Screen Emulsion Thickness:	
Laminate, direct capillary film, µm	38
Build-up, direct coated emulsion, µm	12

TYPICAL DRYING CYCLE

5 to 10 minutes @ 80 °C, if co-curing different resistors

TYPICAL CURING PERFORMANCE

Percent Volatiles

VOC, g/l 578

Convection Box Oven

30 minutes @ 120°C

Infrared Heat Source

2 minutes @ 250°C

The above cure profile is a guideline recommendation. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

After application

Electrical Properties

Resistivity, cured thickness of 18 to 24 µm, ±10%, ohms/sq:

M 3010-1RS	10
M 3012-1RS	100
M 3013-1RS	1,000
M 3014-1RS	10,000
M 3015-1RS	100,000
M 3021-1RS	20

Power Rating:

Watts/in ² , Aluminum backed, max	10
Watts/cm ² , Aluminum backed, max	1.8

Resistivity change after humidity test

100 ohm/sq to 1 meg ohm/sq, max, %	10
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Resistivity change after thermal aging

1000 hours @ 80°C on Polyester, max, %	10
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Temperature Coefficient of Resistance (TCR), on FR4 600, ppm

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

DIRECTIONS FOR USE

- Should thinning become necessary, use carbitol acetate (2 % by weight).
- Use standard screen cleaners for cleanup. Recommend ICC Cleaner #857 followed by a propanal wipe.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Store in a cool, well ventilated area.

Optimal Storage : 25 °C

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

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