

LOCTITE M 2000RS E&C

June 2016

PRODUCT DESCRIPTION

LOCTITE M 2000RS E&C provides the following product characteristics:

Technology	Thermosetting
Appearance	Black
Product Benefits	<ul style="list-style-type: none"> • One component • High wear resistance • Screen printable for reduction in circuit profile and production • Laser trimmable (linearity of 1%) • IR curable
Cure	Heat cure and IR cure
Application	Conductive Ink
Diluent	Carbitol acetate
Key Substrates	FR-3, FR-4, CEM-1, CEM-3, Polyether Sulfone and Ceramic

LOCTITE M 2000RS E&C is a one component, screen printable, potentiometer resistive carbon system that is laser trimmable for linearity of 1%. It eliminates soldering of discrete components, reduces production time and permits the circuit profile to be reduced.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield - HBT, 25 °C, mPa·s (cP):	
Spindle 14	34,000
Density, 100 ohm to 1 mohm/sq, g/cm ³	1.3
Coverage, cm ² /g:	
M 2001RS E&C – contains up to 41% silver	168
M 2010RS E&C – contains up to 30% silver	180
M 2012RS E&C	234
Shelf Life @ 25 °C (from date of qualification in original seal), days	365
Resistance Range, before application, ohm to Kohm	1 to 100

TYPICAL SCREEN PRINTING PROCESS

Emulsion Thickness	
Laminate, Indirect, mil	1.5
Build-up, Direct, mil	0.5
Recommended Screen Mesh	
Stainless steel	200
Polyester screen	196

TYPICAL DRYING CYCLE

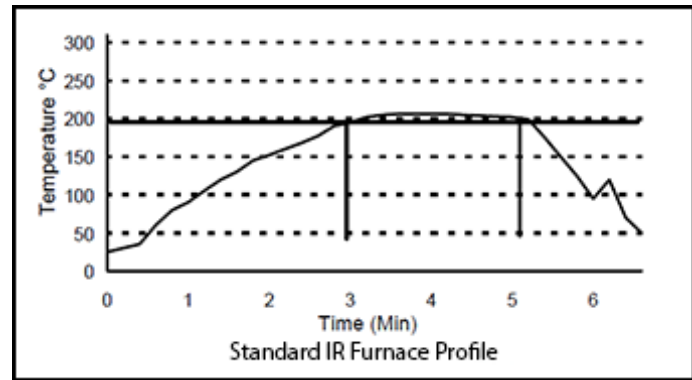
5 to 10 minutes @ 80 °C, if co-curing different resistors

TYPICAL CURING PERFORMANCE

Percent Volatiles	
VOC, g/l	407
Convection Box Oven	
30 minutes @ 200°C	

Infrared Heat Source

2 minutes @ 200°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, 0.6 to 0.7 mils/15-18 microns, ±10%, ohms/sq:

M 2001RS E&C – contains up to 41% silver	1
M 2010RS E&C – contains up to 30% silver	10
M 2031 POL E&C	24
M 2012RS E&C	100
M 2023 POL E&C	2,000
M 2014RS E&C	10,000
M 2015 POL E&C	66,000
M 2013-5RS E&C	± 5 % of 1K

Power Rating:

Watts/in ² , max	30
Watts/cm ² , max	5.4

Resistivity change in solder

6 seconds @ 250°C, 100 ohm/sq to 1 meg ohm/sq, max, %

Resistivity change after humidity test

100 ohm/sq to 1 meg ohm/sq, max, %

Resistivity change after thermal aging

1000 hours @ 258°C on FR-4, CEM-1, CEM-3, 100 ohm/sq to 1 meg ohm/sq, max, %

Solvent Resistance MEK wipe resistant

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Some separation of components is common during shipping and storage. It is recommended that the contents of the shipping container be thoroughly mixed prior to use.
2. Use Glycol Ether OB, Diethylene Glycol Monobutyl Ether or Glycol Butyl Ether Alcohol, not to exceed 1% of weight. For clean-up, use standard screen cleaners.

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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