

LOCTITE M 2016RS E&C

November 2015

PRODUCT DESCRIPTION

LOCTITE M 2016RS E&C provides the following product characteristics:

Technology	Thermosetting
Appearance	Black
Product Benefits	<ul style="list-style-type: none"> One component Applicable with manual or semi automatic screen printing equipment Good screen residence time Can be mixed to produce accurately controlled resistance values Less than 5% resistance changes after soldering, humidity and thermal ageing exposure
Cure	Heat cure
Application	Conductive Ink
Typical Assembly Applications	Printed resistors and Potentiometers
Key Substrates	FR-3, FR-4, CEM-1 and CEM-3 polyether sulphone and ceramic substrates

LOCTITE M 2016RS E&C of products are specifically designed for printing potentiometers and resistors onto printed circuit boards.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity 35,000, ASTM D2393, mPa·s (cP)	35,000
Density, kg/cm ³	1,340
Shelf Life @ 18 to 25 °C (from date of qualification in 1 original seal), hour	
Flash Point , °C	78

TYPICAL SCREEN PRINTING PROCESS

Emulsion Thickness	
Direct or indirect emulsion μm	25 to 50
Printing Equipment Type	
Manual	
Semi-automatic	
Recommended Screen Type	
Monofilament polyester & Stainless Steel threads/cm	77 to 100
Recommended Squeegee	
Polyurethane , Shore Hardness	60 to 70
Speed (not to exceed), cm/s	10
Applied Dry Coating Thickness	
Applied Dry Coating Thickness, μm	15 to 25

TYPICAL DRYING CYCLE

15 to 30 minutes @ 25 °C:

TYPICAL CURING PERFORMANCE

Convection Box Oven

30 minutes @ 200°C

Infrared Heat Source

6 minutes @ 200°C

If different resistors are applied on the same board, it is not advisable to cure each resistor type individually. It is recommended to dry each resistor after printing, 5 to 10 minutes @ 120°C. Full cure at 200°C should be performed after printing the last resistor type.

These cure schedules are a general guideline for additive circuitry. Other cure schedules can be utilized depending on laminates and processing parameters.

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

As a cured coating

Physical Properties

Adhesion , ASTM 3359 Method B, grade 5B

Electrical Properties

Resistivity, ±15%, ohms/square/25 μm	>500,000
Temperature Coefficient of Resistance (TCR), ppm	200

GENERAL INFORMATION

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

DIRECTIONS FOR USE

- LOCTITE M 2016RS E&C should be thoroughly stirred prior to use. Avoid rapid stirring as this causes air entrapment..
- Should thinning become necessary, dilute (not to exceed)1% by weight with butyl carbitol.

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 : 18 to 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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Reference 0.2