

LOCTITE M 4100LR E&C

March 2016

PRODUCT DESCRIPTION

LOCTITE M 4100LR E&C provides the following product characteristics:

Technology	Thermosetting
Appearance	Silver
Product Benefits	<ul style="list-style-type: none"> • One component • Low resistivity • Processing Ease • Printable on rigid substrates • Screen printable for reduction of production time
Cure	Heat cure and IR cure
Application	Conductive Ink
Key Substrates	FR-2, FR-3, FR-4, FR-5, CEM-1, CEM-3 and Ceramic

LOCTITE M 4100LR E&C one component, low resistance, silver filled, conductive polymer is designed as a terminator where LOCTITE M 2000RS E&C polymer resistor series has been applied. This material can also be used in interconnect and crossover applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

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

Spindle 14, speed 10 rpm	45,000
Solids Content by Weight, %	77
Density, g/cm ³	2.7

Theoretical coverage @ 25µm:

cm ² /g	113
m ² /l	26.1
m ² /kg	9.88

Shelf Life @ 25 °C (from date of qualification in original seal), days 365

TYPICAL SCREEN PRINTING PROCESS

Screen mesh, minimum mesh opening 39%:

Stainless Steel Mesh	200
Polyester screen	196
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, mil	60
Wet Film Thickness, µm	30 to 40
Cured Film Thickness, µm	18 to 24
Screen Emulsion Thickness:	
Direct build up, mil	0.5
Indirect laminate, mil	1.5

TYPICAL DRYING CYCLE

5 minutes @ 80 °C in Convection oven

TYPICAL CURING PERFORMANCE

Percent Volatiles

VOC, g/l 407

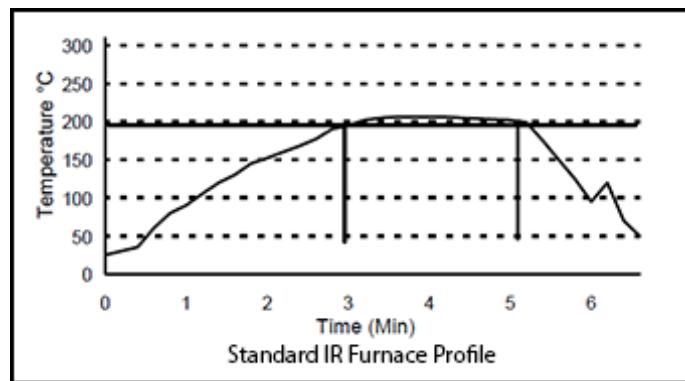
Convection Box Oven

20 minutes @ 200°C

45 minutes @ 165°C minimum cure

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, 1 mil thickness, max, ohms/sq 0.025

Resistivity change in solder, % Max:

6 seconds @ 250°C

Solvent Resistance 5
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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The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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