

LOCTITE ECI 5005 E&C

August 2016

PRODUCT DESCRIPTION

LOCTITE ECI 5005 E&C provides the following product characteristics:

Technology	Thermoplastic
Appearance	Gray liquid
Filler Type	Silver
Product Benefits	<ul style="list-style-type: none">• Conductive• Screen printable
Cure	Heat cure
Application	Conductive Ink
Typical Assembly Applications	<ul style="list-style-type: none">• Capacitive Switch• Resistive and capacitive touch pads• Electroluminescent lamps• ITO replacement

LOCTITE ECI 5005 E&C screen printable conductive ink is designed to leave a transparent conductive film when cured that can be used as a replacement for sputtered ITO film.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Viscosity, Brookfield , mPa·s (cP)	200
Solids Content, sample cured 30 minutes @ 150°C, %	2
Shelf Life @ 25°C (from date of manufacture), days	180
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Cure Schedule

3 minutes @ 85°C + 5 minutes @ 120°C

This material incorporates a two stage cure system. It is important for the printed inks to go directly into the oven after printing.

Parts racked and left out of the oven before curing will tend to separate and "fisheye", showing a non-uniform looking finish.

The above cure profiles are guideline recommendations. 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

Physical Properties

Adhesion on PET substrate, Cross Hatch, grade	5B
Haze, Spectrometer, %	<1.3
Transmission, Spectrometer, @ 550 nm, %	>92

Electrical Properties

Sheet Resistance on PET substrate, 4-point probe, ohms/sq	<100
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GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. LOCTITE ECI 5005 E&C is supplied ready for use and does not require dilution.
2. Mix material prior to use. There may be soft settling in container that needs to be brought back into suspension before use.
3. Mix thoroughly with plastic spatula or mechanical stirrer from bottom of container, careful not to whip air into the product. Using a plastic spatula will decrease the possibility of introducing plastic grindings from the container sidewalls into the product, which could damage the screen.

Application

1. Pour enough ink on the screen to last approximately 10 minutes of printing at a time. Adding more will cause excess solvent evaporation on the screen, affecting the coating thickness as well as the transparency.
2. A number of factors including screen mesh size, squeegee material and emulsion thickness influence the dried film's thickness, final resistance and transparency.
3. Recommended screen printing parameters are:

Screen Type	Polyester or stainless steel
Screen Mesh	305
Emulsion Thickness, μm	10 to 40
Squeegee Type	Polyurethane
Squeegee Hardness, durometer	70 to 80
Print Speed, inches/second	15

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.

Clean-up

The equipment can be cleaned with Isopropanol and Acetone.

Storage

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

Optimal Storage: 0°C. Storage below -20°C or above 30°C can adversely affect product properties.

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.

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Note:

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Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Reference 1