

# LOCTITE ECI 1004 E&C

July 2013

## PRODUCT DESCRIPTION

LOCTITE ECI 1004 E&C provides the following product characteristics:

<b>Technology</b>	Thermoplastic
<b>Appearance</b>	Creamy, silver paste
<b>Product Benefits</b>	<ul style="list-style-type: none"><li>• Fine screen printable</li><li>• Halogen free</li><li>• Excellent adhesion</li><li>• High conductivity</li></ul>
<b>Cure</b>	Heat cure
<b>Application</b>	Conductive Ink
<b>Typical Assembly Applications</b>	ITO film, Membrane switches, Digitizers, Flexible circuits and Electroluminescent lamps
<b>Key Substrates</b>	ITO film, etched ITO and PET substrates

LOCTITE ECI 1004 E&C conductive, screen printable ink is designed for use in touch screen applications.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content (TGA), %	71
Density, g/cc	2.45
Viscosity by Rheometer mPa·s (cP): @ 10 s <sup>-1</sup>	75,000
Shelf Life @ 25°C, days	183
Flash Point, Estimated, °C	100

## TYPICAL CURING PERFORMANCE

### Recommended Drying Cycle

20 minutes @ 130°C

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

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical Properties

Adhesion, Cross Hatch, grade	5B
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### Electrical Properties

Sheet Resistance, 4-point probe, mOhm/sq/mil	30
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## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

### 1. Surface Preparation

- No surface treatment is needed for ITO or etched ITO substrates.

### 2. Mixing/Dilution

- Mix thoroughly before use to ensure it is homogenous.
- Avoid rapid stirring, as this causes air entrapment.
- If needed, the ink can be diluted with up to 1 to 2 % by weight maximum with DBE (dibasic ester). The solvent should be mixed in thoroughly, including scraping the sides of the container, for over a minute until it is homogenous and streak free.

### 3. Application

- LOCTITE ECI 1004 E&C is designed for fine line screen printing application.
- Recommended screen and printing parameters are:

Stainless Steel Screen, mesh	400
Emulsion Thickness, μm	10 to 12
Polyurethane Squeegee, durometer	D90
Print Speed, in/sec	7 to 10
Snap-off Distance, mils	50 to 80

## CLEAN-UP

1. The equipment can be cleaned with esters (butylacetate, ethylacetate) or ketones (MIBK, MEK).

## STORAGE:

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

**Optimal Storage: 5°C. Storage below 0°C or above 60°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.

## 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**

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

**Disclaimer****Note:**

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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