

LOCTITE® ECI 1001

November 2024

PRODUCT DESCRIPTION

LOCTITE® ECI 1001 provides the following product characteristics:

Technology	Thermoplastic
Appearance	Gray paste
Filler type	Silver
Product benefits	<ul style="list-style-type: none"> Highly conductive Low silver content - Low cost
Operating temperature, °C	105 maximum
Cure	Hot air drying or infrared
Application	Conductive ink
Application method	Screen printing
Typical assembly applications	PTF circuits, membrane touch switches and Flexible circuits
Key substrates	Heat treated PET, PEN and PI

LOCTITE® ECI 1001 is a low cost silver ink with excellent balance of flexibility, hardness and adhesion onto traditional treated PET substrates. The unique combination of binder and low-silver content still offers a good sheet resistance around 19 mOhm/sq/25µm. Further, it can be blended with the carbon inks LOCTITE® EDAG 440A or B and is compatible with the dielectric ink LOCTITE® EDAG PF 455B. This product is suitable for screen printing.

TYPICAL PROPERTIES OF UNDRIED MATERIAL

Density, g/cm ³	1.6
Viscosity @ 25°C, Brookfield RVT, after 1 minute mPa.s (cP) Speed 20 rpm	12,000
Solid content, after 1 hour @150°C, %	51
Theoretical coverage, @ 10 µm dry film thickness, m ² /kg	12
Shelf life @ 5°C, months	12
Flash Point - See SDS	

TYPICAL SCREEN PRINTING PROCESS

Recommended dry film thickness	
Dry film thickness, µm	6 to 10
Emulsion thickness	
Emulsion thickness, µm	10 to 40

Recommended screen mesh

Screen type, Polyester screen, mesh/cm	64 to 80
Stainless steel screen, mesh/inch	250 to 300

Recommended squeegee

Squeegee hardness	70 to 90
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TYPICAL DRYING PERFORMANCE

Recommended drying cycle

15 minutes, 120°C

LOCTITE® ECI 1001 can be dried using forced air or infrared systems. Higher temperatures for longer time exposure will improve the performance. Care should be taken with infrared. Too much energy can destroy the coating.

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 THE DRIED MATERIAL

Physical properties

Pencil hardness, ASTM 3363	≥ 2H
Adhesion on PET, ASTM D3359 Method B, grade	5B

Electrical properties

Sheet resistance, 4-point probe, Ohm/sq/25µm	
10 minutes @ 120°C	0.019
2 minutes @ 150°C	0.017

GENERAL INFORMATION

Please consult the Safety Data Sheet (SDS) for safe handling information of this product.

DIRECTIONS FOR USE

Surface preparation

- Clean surface thoroughly prior to application.

Mixing/Dilution

- Mix thoroughly before use to ensure the entire ink volume is homogenous. A slow speed propeller may be utilized to mix until product is uniform.
- Should dilution be necessary, use dibasic ester, DBE (CAS: 95481-62-2). Henkel recommends a maximum of 10 wt%. This should be accomplished by adding solvent at 0.5 wt% intervals until desired viscosity and printability is achieved.

CLEAN UP

The screen and equipment can be cleaned with dilution solvent, or esters (PM-acetate, propylacetate, or ethylacetate), or ketones (MEK, Acetone), or similar solvents.

STORAGE

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

Optimal storage: 4 to 8°C

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel 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 Henkel 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 the specifications of this product.

Conversions

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

Disclaimer

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Reference 2