

LOCTITE ECI 1014 E&C

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PRODUCT DESCRIPTION

LOCTITE ECI 1014 E&C provides the following product characteristics:

Technology	Thermoplastic
Appearance	Gray paste
Filler Type	Silver
Product Benefits	<ul style="list-style-type: none"> • High conductivity • Low temperature drying • Flexible • Compatible for use with polycarbonate, polyester and polyurethane
Operating Temperature-Maximum	105°C
Cure	Hot air drying
Application	Inks and coatings, Conductive Ink
Typical Assembly Applications	Conductive circuits
Key Substrates	PET, PC, TPU, PI, PEN

LOCTITE ECI 1014 E&C is a highly conductive, stretchable ink formulated to dry at low temperatures. This material can be used on solvent sensitive substrates like polycarbonate.

TYPICAL PROPERTIES OF UNDRIED MATERIAL

Solids Content (TGA), %	65.4
Density, g/cm ³	2.2
Viscosity @ 15 s ⁻¹ , Rheometer, mPa·s (cP)	10,000
Thixotropic Index (15/1.5 s ⁻¹)	2.0
Theoretical coverage, :	
@ 10µm dry coating thickness, m ² /kg	12
Shelf Life @ 20°C, days	365

TYPICAL DRYING PERFORMANCE

Recommended Drying Cycle

15minutes @ 120°C

LOCTITE ECI 1014 E&C is suitable for low temperature drying (e.g., 80 to 100°C) which will result in a slightly higher resistance value. Higher temperatures for longer time will improve performance. However, care should be taken with infrared. Too much energy can destroy the coating. Design drying rates for the maximum the substrate and production speeds can tolerate.

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 DRIED MATERIAL

Physical Properties

Adhesion on PET (Autostat CUS5), Cross Hatch, 5B grade

Electrical Properties

Sheet Resistance, 4-point probe, Ohm/sq/25 µm:

5 minutes @ 100°C	0.014
15 minutes @ 120°C	0.009

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Surface Preparation

- Clean surface thoroughly prior to application.

2. Mixing/Dilution

- Mix thoroughly before use with a mechanical pale mixer to ensure ink is homogeneous
- Moderate heating of the ink, up to 40°C, can improve product homogeneity
- Should dilution be necessary use Dowanol DPM (CAS: 34590-94-8). Henkel recommends a maximum of 10 wt%. This should be accomplished by adding solvent at 0.5 wt% intervals by weight until desired viscosity and printability is achieved.

3. Application

- LOCTITE ECI 1014 E&C may be applied by screen printing method.

- Recommended screen and printing parameters are:

Emulsion Thickness, µm:	
Solvent resistant	10 to 40
Squeegee Hardness	70 to 90
Screen Type, Polyester screen, cm	77-48

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: 20°C. Storage below 15°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 Henkel Representative.

Conversions

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

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local Henkel representative for assistance and recommendations on the specifications of this product.

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