

# LOCTITE ECI 1011 E&C

November 2016

## PRODUCT DESCRIPTION

LOCTITE ECI 1011 E&C provides the following product characteristics:

|                                      |   |
|--------------------------------------|---|
| <b>Technology</b>                    | Vinyllic  |
| <b>Appearance</b>                    | Gray paste  |
| <b>Filler Type</b>                   | Silver  |
| <b>Product Benefits</b>              | <ul style="list-style-type: none"> <li>• High conductivity</li> <li>• Small particle size</li> <li>• Excellent adhesion</li> <li>• Excellent printability with flexography</li> <li>• Suitable for rotogravure printing</li> <li>• Suitable for screen printing applications</li> </ul> |
| <b>Operating Temperature-Maximum</b> | 100°C   |
| <b>Cure</b>                          | Hot air drying  |
| <b>Application</b>                   | Conductive Ink  |
| <b>Key Substrates</b>                | Paper and PET substrates  |
| <b>Typical Assembly Applications</b> | <ul style="list-style-type: none"> <li>• UHF and HF antenna assembly</li> <li>• Printed circuits and other conductive circuit applications</li> </ul>   |

LOCTITE ECI 1011 E&C flexography and screen printable ink is formulated to provide high electrical conductivity.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

|  |       |
|--|-------|
| Particle Size, $\mu\text{m}$   | <2    |
| Solids Content, after 90 minutes @ 150°C, %                                    | 75.6  |
| Density, g/ml  | 3     |
| Viscosity @ 15 s <sup>-1</sup> , Rheometer, mPa·s (cP)                         | 2,800 |
| Thixotropic Index (1.5/15 s <sup>-1</sup> )                                    | 2.5   |
| Theoretical coverage @ 10 $\mu\text{m}$ dry film thickness, m <sup>2</sup> /kg | 8.3   |
| Shelf Life @ 20°C, days  | 365   |
| Flash Point - See SDS  |       |

## TYPICAL CURING PERFORMANCE

### Recommended Drying Cycle

Using Batch Processing  
10 minutes @ 150°C (box oven)

Using roll-2-roll flexographic printing

- In-line NIR drying possible. Time and wattage needed needs to be determined experimentally on the production line.
- Photonic sintering possible after drying off the solvent.

LOCTITE ECI 1011 E&C can be dried using forced air, (near) infrared or photonic systems. Higher temperatures for longer time exposure will improve the performance. 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 CURED MATERIAL

### Physical Properties

Adhesion, Cross cut test, grade  $\geq 3B$

### Electrical Properties

Sheet Resistance, ohm/sq/25  $\mu\text{m}$  <0.005

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

### Surface Preparation

1. Clean surface thoroughly prior to application.

### Mixing/Dilution

1. LOCTITE ECI 1011 E&C is supplied ready for use.
2. Mix thoroughly before use to ensure it is homogenous.
3. If needed, the ink can be diluted with EDAG DIL 5 E&C.

### Application

|   |            |
|---|------------|
| Emulsion, Solvent resistant emulsion, $\mu\text{m}$ | 10 to 40   |
| Squeegee Shore Hardness                             | 70 to 90   |
| Screen Type, Polyester screen, mesh                 | 200 to 300 |

### Application (for Flexographic printing)

1. Anilox roll 9.5 to 21.4 ml/m<sup>2</sup> (6 to 13.8 BCM) with a line count of 50 to 70 lines/cm (150 to 178 lines/inch) respectively, depending on desired thickness.

## 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 5°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.

## 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:**

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