

LOCTITE ECI 1802 E&C

February 2019

PRODUCT DESCRIPTION

LOCTITE ECI 1802 E&C provides the following product characteristics:

Technology	Thermoplastic
Appearance	Grey Liquid
Filler Type	Silver
Product Benefits	<ul style="list-style-type: none"> • High conductivity • Extended screen residence time • Excellent adhesion and solderability
Application Method	Screen printing
Cure	Infrared (IR) or Hot air drying
Application	Printed electronics, Electrically conductive ink
Typical Assembly Applications	<ul style="list-style-type: none"> • Busbar structure on heterojunction crystalline silicon cells • Ribbon connection in solar cell assembly
Key Substrates	ITO coated substrates, Ag plated and Al plated substrates

LOCTITE ECI 1802 E&C thermoforming, electrically conductive ink specially formulated for use in electronic circuit assembly applications.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content @ 200°C, %	~83
Viscosity, Cone & Plate, mPa·s (cP):	
@ Speed 5 rpm	46,000
Shelf Life @ 20 to 25°C (from date of manufacture), days	180
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Recommended Drying or Infrared (IR) Cycle

20 minutes @ 200°C

LOCTITE ECI 1802 E&C 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. 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 to ITO, grade	5B
Peel Strength of solder @ 180° angle, N	>1.2

Electrical Properties

Sample cured 20 minutes @ 200°C	
Electrical Conductivity, ohm-cm	~3.2×10 ⁻⁵

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 to ensure it is homogenous. A slow speed propeller may be utilized to mix until product is uniform.
- If needed, the ink can be diluted with Butyl glycol acetate

3. Application

- LOCTITE ECI 1802 E&C may be applied by screen printing method.
- Recommended screen and printing parameters are:

Screen Type	Stainless steel screen
Screen mesh	325 to 360 mesh
Squeegee Hardness	70 to 80

CLEAN-UP

- Carbitol acetate can be used to clean the screen.

STORAGE:

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

Optimal Storage : 20 to 25 °C

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.

Conversions

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

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