

# LOCTITE ECI 8090 E&C

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## PRODUCT DESCRIPTION

LOCTITE ECI 8090 E&C provides the following product characteristics:

<b>Technology</b>	Thermoplastic
Appearance	Black paste
Filler Type	Carbon Black
Operating Temperature -Maximum	90°C
<b>Cure</b>	Hot air drying or infrared
<b>Application</b>	Conductive Ink
Product Benefits	<ul style="list-style-type: none"> <li>• Screen printable</li> <li>• Flexible</li> <li>• Printable on most common substrates</li> <li>• Rapid heating with well-defined cut-off temperature, no external control devices needed</li> <li>• Self-regulation temperature in the 80 to 85°C range</li> </ul>
Typical Assembly Applications	Self regulating heating elements
Key Substrates	PET, PEN, PI

LOCTITE ECI 8090 E&C is a Positive Temperature Coefficient (PTC) screen printable ink designed for applications where low voltage (< 50 V) self-regulating heaters are required. This material is formulated to rapidly heat to a specific threshold temperature and then maintain constant temperature for the device. The self-regulating temperature of the bare ink is in the 80 to 85 °C range.

## TYPICAL PROPERTIES OF UNDRIED MATERIAL

Solids Content, box oven 2 hours @ 150°C, %	38
Density, g/mL	1.0
Viscosity, Plate & Plate, mPa·s (cP):	
Plate 20 mm @ Shear rate 15 s <sup>-1</sup>	20,000
Thixotropic Index (1.5/15 s <sup>-1</sup> )	6
Theoretical coverage @ 10 µm dry coating thickness, m <sup>2</sup> /kg	38
Shelf Life @ 8 to 28°C, days	365

## TYPICAL DRYING CYCLE

### Recommended Drying Cycle

10 minutes @ 120°C

LOCTITE ECI 8090 E&C can be dried using forced air or infrared systems. 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

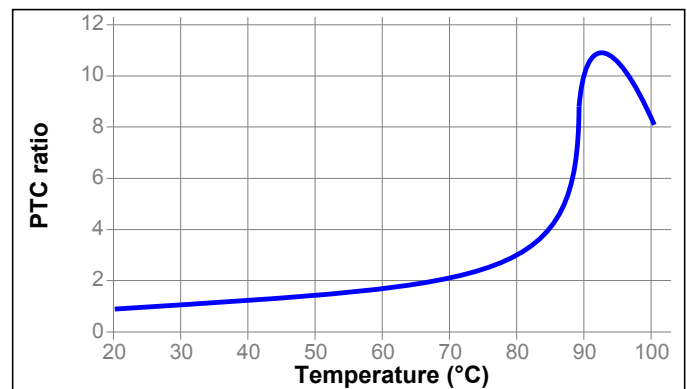
Adhesion on PET, Cross Hatch, ASTM 3359, 5B grade

### Electrical Properties

Sheet Resistance, 4-point probe, kOhm/sq/25µm:  
10 minutes @ 120°C 1.0

PTC ratio > 7

**PTC Ratio vs. Temperature curve of dried PTC-ink, measured on a test design. The PTC ratio is calculated by PTC Ratio (T) = R(T)/R(25°C)**



**GENERAL INFORMATION**

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

**DIRECTIONS FOR USE****1. Surface Preparation**

- Surfaces to be coated must be clean, dry and free of dust.

**2. Mixing/Dilution**

- LOCTITE ECI 8090 E&C is supplied ready for use.
- Mix thoroughly before use to ensure it is homogenous.
- If dilution is necessary, this can be done with butyl glycol acetate.
- If needed, the resistance can be slightly increased by adding LOCTITE NCI 8092 E&C.

**3. Application**

- Recommended screen printing parameters are:

Screen Type:

Polyester Screen, mesh/cm	54
Stainless Steel Screen, mesh/inch	200
Typical dry coating thickness, $\mu\text{m}$	17
Emulsion, Solvent resistant, $\mu\text{m}$	10 to 40
Squeegee Hardness	70 to 90

**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.

**CLEAN-UP**

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 : 8 to 28 °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 Henkel Representative.

**Conversions**

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

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