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Technical Data Sheet

LOCTITE® ECI 1016

November 2024

Product description

LOCTITE® ECI 1016 provides the following product characteristics:

Technology	Thermoplastic
Appearance	Gray paste
Filler type	Silver
Product benefits	• Good flexibility • Good adhesion • High conductivity
Operating temperature, °C	105 (maximum)
Cure	Hot air drying
Application	Inks and coatings, Electrically conductive ink
Typical assembly applications	RFID, printed antennas and other conductive circuits
Key substrates	PET, paper

LOCTITE® ECI 1016 is a high conductive silver with a low viscosity suitable for high-speed roll-to-roll rotary screen-printing. The specific choice of silver particles and binder makes this ink particularly suitable for antenna applications on PET substrates with high reliability.

TYPICAL PROPERTIES OF UNDRIED MATERIAL

Solids content, %	68
Density, g/ml	2.6
Viscosity @ 1.5 s^{-1} @25°C , Rheometer , mPa·s (cP)	7,300
Thixotropic index (15/1.5 s^{-1})	1.7
Theoretical coverage, m^2/kg @ 10 µm dry coating thickness	8
Shelf life @ 2-8°C, days	365

TYPICAL DRYING PERFORMANCE

Recommended drying cycle
2 minutes, 150°C

LOCTITE® ECI 1016 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 THE DRIED MATERIAL

Physical Properties

Adhesion on untreated PET, Cross cut test, grade	5B

Electrical properties

Sheet resistance, 4-point probe, Ohm/sq/25µm 10 min at 150°C	0.0065

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Surface preparation

- Clean surface thoroughly prior to application.

2. 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-9, DBE-9 (CAS: 627-93-0). 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.

3 Application

- LOCTITE® ECI 1016 may be applied by rotary screen printing method.
- Recommended screen and printing parameters are:

Screen type, Roto mesh	305-80-17%

Others can be used. The required thickness will dictate the screen type.

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.

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

Optimal Storage: 2 to 8°C. Storage below 2°C or greater than 8°C can adversely affect product properties.

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
(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

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