Technical Data Sheet

LOCTITE EDAG PD 004A E&C

November 2015

PRODUCT DESCRIPTION

LOCTITE EDAG PD 004A E&C provides the following product characteristics:

Technology	Silver Ink
Appearance	Silver liquid
Product Benefits	• Electrically conductive • UV curable • Fast curing • Low VOC
Binder	Urethane acrylate
Cure	Ultraviolet (UV) light
Application	Conductive Ink
Typical Assembly Applications	Conductive label applications

LOCTITE EDAG PD 004A E&C electrically conductive silver ink is formulated for use on solvent sensitive substrates. It is designed to be applied by flexographic/rotogravure and screen printing methods.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content by Weight, %	100
Density, lbs/gal	22.3
Viscosity, Brookfield CP42, 25 °C, mPa·s (cP):	
Speed 50 rpm	800
Theoretical coverage @ 25µm coating thickness, sq ft/gal/mil	1,600
Shelf Life @ maximum15°C, days (from date of qualification in original seal)	180
Flash Point, ºC	

TYPICAL CURING PERFORMANCE

Percent Volatiles

VOC, g/l	765

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Theoretical Coverage @ 25 µm:	
m² /kg	3.84
m² /l	8.07
sq ft/gal	329

Electrical Properties

Sheet Resistivity @ 25 µm film thickness, ohms/sq	0.006

GENERAL INFORMATION

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

DIRECTIONS FOR USE

Surface Preparation

1. Substrate must be clean, dry and free of dust.

Mixing/Dilution

1. LOCTITE EDAG PD 004A E&C should be mixed thoroughly prior to dilution or dispensing into the recirculation system.
2. Using a mechanical stirrer or paint shaker, mix until no sediment remains in the bottom of the container.
3. Avoid rapid stirring, as this causes air entrapment.
4. LOCTITE EDAG PD 004A E&C has been formulated ready to use and applied by .
5. Should thinning become necessary, use PM acetate. Keep volume solids as high as possible while optimizing lay down for a continuous film deposit.

Recirculation System

1. A closed recirculation system with in-line viscosity control is best for continuous film thickness control.
2. Equipment should include:
   - Propeller agitated mixing tank
   - Peristaltic or double diaphragm pumps (to minimize shear)
   - Enclosed doctor blades
   - In-line viscometer based on sheer or frequency modulated (not gravity cup)
   - A feedback operated automatic solvent dispensing system
3. It is more important to maintain constant volume solids and viscosity to achieve a controlled ink deposit.

Application Details

1. LOCTITE EDAG PD 004A E&C should be applied 5 to 12 µm dry film thickness, depending on function or accompanying conductive layers.
2. One or two passes are requireed to build a film thickness of 12 µm.
3. Gravure rolls of 100 line screen or anilox roles between 15 bcm 200 line to 25 bcm 100 line is recommended.

Drying Temperatures and Resistance Control

1. Force dry coated film with high velocity hot air or infrared systems.
2. High temperatures for long durations improve performance..
3. Design drying rates for the maximum the substrate and production speeds can tolerate..
4. Maximum performance of Electrodag PD-056 is achieved by initially flashing off the bulk of the solvent in the ink through low heat, high airflow dryers, followed by higher temperature exposure. This allows proper film formation and achievement of optimal conductivity.
5. Testing will be necessary to determine optimal speed with drying equipment used. Avoid initial substrate temperatures above 70°C for flashing off the solvent. Substrate temperatures in excess of 100°C can be used for final treatment.
6. Sufficient airflow is necessary to prevent localized solvent saturation.
7. In-line electrical resistance measurements are possible with a variety of contact or non-contact equipment. Figures are recorded into a computer via parallel bus.
8. Resistance monitoring is an effective indication of proper film build and drying rates, as well as being the ultimate performance requirement.

Storage

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

Keep from freezing. Keep container tightly closed when not in use. Store in a cool, well ventilated area. Keep away from heat, sparks, and open flame. Protect material from direct sunlight. Ground and bond containers when transferring materials

Optimal Storage : Below 32 °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.

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

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

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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