Technical Data Sheet

LOCTITE EDAG PD 056 E&C

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PRODUCT DESCRIPTION

LOCTITE EDAG PD 056 E&C provides the following product characteristics:

Technology	PVC Vinyl
Appearance	Silver liquid
Product Benefits	• Flexible coating • Electrically conductive • Suitable for high speed rotogravure printing
Cure	Infrared or Hot air drying
Application	Conductive coating
Operating Temperature-Maximum	104ºC
Typical Assembly Applications	Electronic circuitry, Flexible conductive coating for plastic substrates, Rotogravure printed circuits, Smart labels/RFID, Medical sensors and EMI shielding
Key Substrates	ITO sputtered polyester film, Copper circuitry, Glass and Metal substrates

LOCTITE EDAG PD 056 E&C coating consists of silver particles in a thermoplastic resin that rapidly air dries to form a flexible conductive coating. It is fully miscible with LOCTITE SS 24600 E&C conductive graphite coating to provide a range of resistances.

LOCTITE EDAG PD 056 E&C is one of a series of LOCTITE EDAG coatings designed to provide controlled electrical properties.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content by Weight, %	63.6
Density, lbs/gal	17.5
Viscosity, Brookfield - RVT, 25 °C, mPa·s (cP):	
Spindle 4, speed 20 rpm	2,500
Shelf Life @ below32°C, days (from date of qualification in original seal)	365
Freezing Point, °C	47

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 056 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 056 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 056 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
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

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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