

# LOCTITE EDAG 423SS E&C

September 2014

## PRODUCT DESCRIPTION

LOCTITE EDAG 423SS E&C provides the following product characteristics:

<b>Technology</b>	Thermoplastic
<b>Appearance</b>	Dark gray
<b>Cure</b>	Hot air drying
<b>Operating Temperature-continuous</b>	105°C
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• Applicable with manual, semi-automatic and high speed reel-to-reel screen printing equipment</li> <li>• Excellent screen residence time</li> <li>• Non-critical, flexible low temperature drying cycles</li> <li>• Excellent adhesion to polyester film</li> <li>• Compatible for use with polyester film, polycarbonate film, PVC film, paper and cardboard</li> </ul>
<b>Application</b>	Conductive Ink
<b>Typical Assembly Applications</b>	Membrane touch switches, Printed resistors, Keyboards, Heating elements, Flexible circuits, Membrane switches and Protection against electrostatic discharge (ESD)

LOCTITE EDAG 423SS E&C conductive, screen printable ink consists of very finely divided graphite particles dispersed in a thermoplastic resin. It is designed for use in the production of low voltage circuitry on polyester film.

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content, %	36
Viscosity, Brookfield, 20 °C, mPa·s (cP):	
Speed 20 rpm	20,000
Density, g/cm <sup>3</sup>	1.1
Theoretical coverage, wet product @ 10µm dry coating 20 thickness, m <sup>2</sup> /kg	
Shelf Life @ 5 to 30 °C (from date of qualification in original seal), days	365
Flash Point, DIN 53213, °C	78

## TYPICAL SCREEN PRINTING PROCESS

### Printing Equipment Type

- Manual
- Semi-automatic
- High speed reel-to-reel

### Recommended Screen Type

- Monofilament polyester screen, threads/cm 61 to 90
- Stainless steel screen, threads/cm 77 to 110

### Recommended Squeegee

- Polyurethane, durometer 70 to 75

## Emulsion Thickness

Emulsion Thickness, µm 20 to 40

## Applied Dry Coating Thickness

Applied Dry Coating Thickness, µm 6 to 10

## TYPICAL DRYING CYCLE

### Recommended Drying Cycle

Conventional Air Circulated Oven:  
 30minutes @ 90°C or  
 5minutes @ 120°C

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

Dry Coating on polyester film dried 30 minutes @ 90°C

### Physical Properties

Adhesion, ASTM D3359 Method B, grade 5B

### Electrical Properties

Sheet Resistance @ 25µm dry coating thickness, <42 ohms/sq

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

1. LOCTITE EDAG 423SS E&C is supplied ready for use and does not require dilution.
2. Avoid rapid stirring as this causes air entrapment.
3. Should thinning become necessary, dilute 1 to 3% by weight with 2-butoxy ethyl acetate (butylglycol acetate).
4. If a gel structure forms after extended storage, the product may be warmed slightly in a water bath (not exceeding 65°C) and stirred.

## Clean-up

1. The equipment can be cleaned with MEK, MIBK, Acetone or similar solvents..

## Storage

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

Store in a cool, well ventilated area

## Optimal Storage : 5 to 30 °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

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

#### 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

**In case products are delivered by Henkel Belgium NV, Henkel Electronic Materials NV, Henkel Nederland BV, Henkel Technologies France SAS and Henkel France SA please additionally note the following:**

In case Henkel would be nevertheless held liable, on whatever legal ground, Henkel's liability will in no event exceed the amount of the concerned delivery.

**In case products are delivered by Henkel Colombiana, S.A.S. the following disclaimer is applicable:**

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. 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.

Any liability in respect of the information in the Technical Data Sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

**In case products are delivered by Henkel Corporation, Resin Technology Group, Inc., or Henkel Canada, Inc. the following disclaimer is applicable:**

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of

any production methods mentioned herein and to adopt such precautions as may be advisable for the protection of property and of persons against any hazards that may be involved in the handling and use thereof. In light of the foregoing, **Henkel Corporation specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel Corporation's products. Henkel Corporation specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits.** The discussion herein of various processes or compositions is not to be interpreted as representation that they are free from domination of patents owned by others or as a license under any Henkel Corporation patents that may cover such processes or compositions. We recommend that each prospective user test his proposed application before repetitive use, using this data as a guide. This product may be covered by one or more United States or foreign patents or patent applications.

#### Trademark usage

Except as otherwise noted, all trademarks in this document are trademarks of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.2