

# LOCTITE EDAG 440 AS E&C

August 2018

## PRODUCT DESCRIPTION

LOCTITE EDAG 440 AS E&C provides the following product characteristics:

<b>Technology</b>	Thermoplastic
<b>Appearance</b>	Nickel
<b>Operating Temperature</b>	-40 to 95 °C
<b>Solvent</b>	Methylethylketone (MEK)
<b>Product Benefits</b>	<ul style="list-style-type: none"> <li>• High conductivity</li> <li>• Ease of use</li> <li>• Over-coatable</li> <li>• High coverage</li> <li>• High conductivity per kilo of wet product</li> <li>• High conductivity per <math>\mu\text{m}</math> dry coating</li> <li>• Improved stability against sedimentation</li> <li>• Compatible with commonly used plastics</li> </ul>
<b>Cure</b>	Room temperature cure
<b>Application</b>	Conductive coating
<b>Typical Assembly Applications</b>	Reflective coating on parabolic antennas and Plastic housing of consumer electronics and medical equipments

LOCTITE EDAG 440 AS E&C EMC shielding coating is designed to provide electromagnetic compatibility (EMC) in electronic equipment housing. It is an extremely conductive nickel coating that provides excellent shielding against radiated electro-magnetic interference (EMI) and protection against electrostatic discharge (ESD).

## TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content ( ), %	68
Viscosity @ 20 °C, mPa·s (cP):	
Speed 20 rpm	5,750
Density, kg/m <sup>3</sup>	2,025
Theoretical coverage, m <sup>2</sup> /kg:	
@ 10 $\mu\text{m}$ coating thickness	17
Shelf Life @ 5 to 30°C, year	1
Flash Point , °C	17

## TYPICAL PROPERTIES OF CURED MATERIAL

On Lexan panels, airdried overnight

### Physical Properties

Attenuation @ 50 $\mu\text{m}$ , dB	50 to 70
Adhesion	5B
Pencil hardness	9H

### Electrical Properties

Sheet Resistivity , ohm/sq:	
@ 1 mil coating thickness	<0.5

## GENERAL INFORMATION

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

## DIRECTIONS FOR USE

### 1. Surface Preparation

- Surface to be coated must be dry and free on contaminants such as oil or chemical residues.

### 2. Mixing/Dilution

- Thoroughly mix LOCTITE EDAG 440 AS E&C before dilution. Normally, the product is diluted with MEK.
- Recommended dilution ratio(s) as follows:
  - By Volume: 1 part product to 1 part solvent
  - By Weight: 5 part(s) product to 2 part(s) solvent
- Complicated parts, such as those molded from solvent sensitive plastics (ABS, Polystyrene and Polycarbonate), are very prone to stress cracking. In such cases, replacing about 15% of the MEK with Isobutanol or Diacetone Alcohol (DAA) provides a suitable alternative.

### 3. Application

- LOCTITE EDAG 440 AS E&C should be applied by spray using conventional propeller agitated pressure pot spray systems.
- Small prototype runs may be sprayed with well-mixed product, using suction cup spray equipment.
- A nominal 50 to 75  $\mu\text{m}$  dry coating thickness is recommended for good shielding performance. However, a thinner coating may be acceptable, depending on the shielding requirements of the device being protected.
- Avoid dry spraying for maximum adhesion and conductivity.

### 4. Drying

- LOCTITE EDAG 440 AS E&C dries to touch in about 5 minutes; to handle in approximately 20 minutes, depending on ambient temperature, coating thickness and diluent.
- Best coating properties will be achieved after 4 to 16 hours air drying, depending on coating thickness and ambient temperatures.
- Forced drying at 60 to 70 °C for 20 to 30 minutes is possible

### 5. Cleanup

- For high volume production where masks are used to prevent coating certain areas, the masks can be cleaned with esters (butylacetate, ethylacetate) or ketones (MIBK, MEK) solvents.
- Spray or mixing equipment may be cleaned with the same solvents.

**STORAGE:**

Store product in the unopened container in a cool dry well ventilated area. Storage information may be indicated on the product container labeling.

**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.

Empty containers may retain hazardous properties.

**Conversions**

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\text{N} \times 0.225 = \text{lb/F}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{psi} \times 145 = \text{N/mm}^2$

$\text{MPa} = \text{N/mm}^2$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

**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 Corporation, 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 and/or registered trademarks of Henkel and its affiliates in the U.S. and elsewhere.

Reference 0.3