

LOCTITE EDAG PF 407A E&C

October 2014

PRODUCT DESCRIPTION

LOCTITE EDAG PF 407A E&C provides the following product characteristics:

Technology	Thermoplastic
Appearance	Black
Filler Type	Carbon
Product Benefits	<ul style="list-style-type: none"> • Conductive • Screen printable • Good screen residence time • Flexible low temperature drying cycles • Good adhesion
Cure	Heat cure
Application	Conductive Ink
Operating Temperature - Continuous	105°C
Typical Assembly Applications	Printed resistors, membrane touch switches, keyboards, Heating elements, Flexible circuits and Protection against electrostatic discharge (ESD)
Key Substrates	Polyester film, Polyimide film, Polycarbonate, Paper and Cardboard

LOCTITE EDAG PF 407A E&C polymer thick film is designed for production of low voltage circuitry on polyester film and solvent sensitive substrates such as polycarbonate.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content, %	36
Viscosity, Brookfield - RVT, mPa·s (cP): Speed 20 rpm, @ 20°C	35,000
Density, kg/m	1,120
Theoretical coverage, m ² /kg: @ 10µm	23
Shelf Life @ 5 to 30°C, year: From date of qualification in original seal	1
Flash Point, DIN 53213, °C	47

TYPICAL SCREEN PRINTING PROCESS

Recommended Thickness

Applied dry coating thickness, µm	6 to 10
-----------------------------------	---------

Emulsion Thickness

Emulsion Thickness, µm	20 to 40
------------------------	----------

Recommended Squeegee

Polyurethane, durometer	70 to 75
-------------------------	----------

Recommended Screen Type

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

Printing Equipment Type

Manual	
Semi-automatic	
High speed reel-to-reel	

TYPICAL CURING PERFORMANCE

Recommended Drying Cycle

30 minutes @ 90°C or
15 minutes @ 120°C

LOCTITE EDAG PF 407A E&C can be dried immediately after printing.

The above cure profile is a guideline recommendation. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Dry Coating on Polyester film, dried 15 minutes @ 120°C.

Physical Properties

Adhesion, grade	5B
-----------------	----

Electrical Properties

Sheet Resistivity @ 25µm, ohms/sq	≤20
-----------------------------------	-----

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. LOCTITE EDAG PF 407A E&C should be thoroughly stirred prior to use. Avoid rapid stirring as this causes air entrapment..
2. Bring product to room temperature prior to use..
3. LOCTITE EDAG PF 407A E&C is supplied ready for use. Should thinning become necessary, dilute 1 to 3% by weight with Arcosolv PM-Acetate..
4. Keep product container tightly closed when not in use.
5. If a gel structure forms after extended storage, the product may be warmed slightly in a water bath (not exceeding 50°C) and stirred. Very often, stirring is enough to obtain a proper viscosity again.

Clean-up

To clean screen and equipment, use 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.

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 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 of Henkel Corporation in the U.S. and elsewhere. ® denotes a trademark registered in the U.S. Patent and Trademark Office.

Reference 0.2