



# Electrodag PF-407C

June 2012

## PRODUCT DESCRIPTION

Electrodag PF-407C provides the following product characteristics:

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

Electrodag PF-407C 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, %	37
Viscosity, Brookfield, mPa·s (cP):	
Speed 20 rpm, @ 20°C	42,500
Density, kg/cm <sup>3</sup>	1,130
Theoretical coverage @ 10 µm, m <sup>2</sup> /kg	23
Shelf Life @ 5 to 30°C, year:	
From date of qualification in original seal	1
Flash Point, DIN 53213, °C	78

## TYPICAL SCREEN PRINTING PROCESS

<b>Recommended Thickness</b>	
Applied dry coating thickness, µm	6 to 10
<b>Emulsion Thickness</b>	
Emulsion Thickness, µm	20 to 40
<b>Recommended Squeegee</b>	
Polyurethane, durometer	70 to 75
<b>Recommended Screen Type</b>	
Monofilament polyester screen, threads/cm	61 to 90
Stainless steel screen, threads/cm	77 to 110
<b>Printing Equipment Type</b>	
Manual	
Semi-automatic	
High speed reel-to-reel	

## TYPICAL CURING PERFORMANCE

### Recommended Drying Cycle

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

Electrodag PF-407C 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. Electrodag PF-407C 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. Electrodag PF-407C is supplied ready for use. Should thinning become necessary, dilute 1 to 3% by weight with Electrodag™ Diluent 2 (butyl "Carbitrol").
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**

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

### **Note**

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Reference 0.1