



PM-500

July 2011

PRODUCT DESCRIPTION

PM-500 provides the following product characteristics:

Technology	Acrylic
Appearance	Silver
Filler Type	Silver
Product Benefits	<ul style="list-style-type: none"> • Conductive • Fast drying • Flexible
Cure	Air dry
Application	Conductive Ink
Typical Assembly Applications	RFID antenna, Electronic circuitry and Bio and medical sensors
Key Substrates	Paper and Polymer substrates
pH	8.5 to 10.0

PM-500 is designed to dry rapidly to form a flexible, conductive coating. It is suitable for applications using high speed flexographic printing techniques.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Solids Content, % 82.5 to 84.0

Viscosity, Brookfield - RVT, mPa·s (cP):

Spindle 4, speed 20 rpm, @ 25°C 2,300 to 7,000

Density, kg/l 3,200

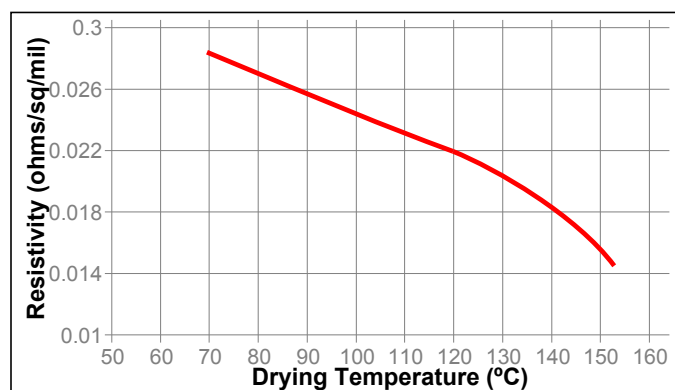
Theoretical coverage, m² /kg:

@ 25µm 5.74

Shelf Life @ 5 to 40°C (from date of manufacture), 6 months

TYPICAL DRYING PERFORMANCE

Use high velocity hot air and/or infra-red systems for optimum performance. Temperature settings depend on the substrate in use and process speed therefore drying rates should be determined based on the temperature constraints of the substrate and production drying capability. The relationship between resistivity and drying temperature is shown in the following graph. All samples were exposed to the temperature indicated for a period of 1 minute.



Percent Volatiles

VOC, % 0.7

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

Recommended Coating Thickness, µm 3 to 7

Physical Properties:

Adhesion, grade 5B

Electrical Properties:

Sheet Resistivity @ 25µm, ohms/sq/mil <0.035

Volume Resistivity @ 5µm, ohms/sq/mil:

Based on 0.02ohms/sq/mil <0.105

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Do not freeze
2. Keep product container tightly closed when not in use

3. Mixing/Dilution

- Thoroughly mix PM-500 before use. There should be no unmixed solid material left at the bottom of the container..
- Dilute with PM-511™ to a recommended viscosity of 2,500cP for flexographic printing.
- Dilution should be performed in a stepwise fashion to avoid over-diluting the ink. Over-dilution will reduce the dry film deposit and result in poor film properties.
- Do not dilute with water.

4. Application

- PM-500 can be applied by flexographic printing at speeds up to 35m/min, using an ART anilox roll that is 220lines per inch with a volume of 18.5bcm.
- The use of an enclosed doctor blade is strongly recommended to prevent ink drying on the anilox roll and on the flexographic plate.
- A plastic containment blade and a 0.008inch stainless steel wiper blade are recommended when using an enclosed doctor blade system.

Clean-up

The equipment can be cleaned with any solution that contains water with a pH above 8.5, or diluted with Acheson™ PM-511™. It is advised to begin cleaning immediately after printing to prevent drying of the ink.

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 40 °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

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 and its affiliates ("Henkel") specifically disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Henkel products. Henkel 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 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.

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Reference 0.1