

TECHNOMELT PA 646 (e)

(Electronics) June 2015

PRODUCT DESCRIPTION

TECHNOMELT PA 646 (e) provides the following product characteristics:

| | |
|------------------------------|--|
| Technology | Polyamide |
| Appearance | Black |
| Product Benefits | <ul style="list-style-type: none">• Easy moldability• Good adhesion to a variety of substrates• Excellent moisture resistance• Excellent environmental resistance• Simplified process flow |
| Application | Molding compound thermoplastic |
| Typical Applications | Encapsulation |
| Flammability Rating | UL 94 V0 @ 1.6 to 1.8 mm thickness |
| Operating Temperature | -40 to +125 °C |

TECHNOMELT PA 646 (e) high performance thermoplastic polyamide is designed to meet low pressure molding process requirements. This product can be processed at low processing pressure due to its low viscosity, allowing encapsulation of fragile components without damage. This material produces no toxic fumes in process and provides a good balance of low and high temperature performance. TECHNOMELT PA 646 (e) is particularly suited to applications such as computer connectors and memory sticks where high strength and hardness are desired.

LIQUID-STATE TYPICAL PROPERTIES

| | |
|--------------------------------|------------|
| Viscosity @ 225 °C, mPa·s (cP) | 4,500 |
| Specific Gravity @ 25 °C | 0.98 |
| Softening Point, °C | 170 to 180 |

TYPICAL PROCESS DATA

Handling:

| | |
|-------------------------|------------|
| Molding Temperature, °C | 200 to 240 |
|-------------------------|------------|

TECHNOMELT PA 646 (e) has been formulated to provide the best possible moldability and as wide a molding latitude as possible. Much of the final molding parameters will be determined by the mold design. Although molding and curing conditions will vary from situation to situation, recommended starting ranges are shown above.

SOLID-STATE PROPERTIES

Physical Properties

| | |
|----------------------------------|-----|
| Glass Transition Temperature, °C | -35 |
| Shore Hardness, Shore A | 92 |
| Elongation, at break, % | 800 |

Electrical Properties

| | |
|--|----------------------|
| Dielectric Constant / Dissipation Factor, IEC 60250: | |
| 1MHz | 3.4 / 0.058 |
| 1.8 GHz | 2.6 / 0.015 |
| Dielectric Strength, kV/mm | 22 |
| Volume Resistivity, ohms-cm | 1.7×10^{12} |

TYPICAL PERFORMANCE OF SOLID-STATE MATERIAL

Shear Strength

Lap Shear Strength, ISO 4587:

| | | |
|-------|-------------------|-----------|
| Steel | N/mm ² | 327 |
| | (psi) | (47,415) |
| FR4 | N/mm ² | 1,500 |
| | (psi) | (217,500) |

PERFORMANCE AND RELIABILITY DATA

| | |
|---|------|
| Surface Insulation Resistance (SIR) Testing IPC-TM-650 | Pass |
|---|------|

GENERAL INFORMATION

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

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.

Storage

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

TECHNOMELT PA 646 (e) will absorb moisture from the air. Material from opened containers should be transferred immediately into air tight containers. Material should be stored in sealed containers in a cool dry location in order to maximize shelf life.

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.

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.

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