

## TECHNOMELT® PA 657 N BLACK

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### PRODUCT DESCRIPTION

TECHNOMELT® PA 657 N BLACK provides the following product characteristics:

<b>Technology</b>	Polyamide
Chemical Type	Hot melt adhesive
Cure	Physical setting
Appearance	Black
Components	One-component
Viscosity	Low
<b>Application</b>	Molding
Molding Temperature	180 to 230°C (356 to 446°F)
Operating Temperature Range	-40 to 100°C (-40 to 212°F) Depends on application, without mechanical stress
Specific Benefits	<ul style="list-style-type: none"> <li>• Easy moldability</li> <li>• Designed for molding compound applications</li> <li>• Cold flexibility</li> </ul>

TECHNOMELT® PA 657 N BLACK is a one-component Polyamide Hot Melt Adhesive designed to meet low pressure molding process requirements. This product can be processed at low molding pressure due to its low viscosity, allowing encapsulation of fragile components without damage.

Once applied TECHNOMELT® PA 657 N BLACK solidifies to form a barrier between electronics and the environment. It is a resilient encapsulant with good heat stability and moisture resistance. Typical applications include potting electronics modules, molding strain relief into wiring and encapsulation of sensors. It is a versatile adhesive for many substrates such as FR4, metals and many plastics including ABS, PC.

### TYPICAL PROPERTIES

Specific Gravity @ 20°C, g/cm <sup>3</sup> ISO 1183-1	0.98
Softening Point (in glycerine), °C ASTM E28	150 to 165

Melting Viscosity- RVT, mPa·s (cP)

ASTM D3236:

Spindle 27:

@ 180°C	8,600
@ 190°C	6,500
@ 200°C	4,900
@ 210°C	3,000 to 4,500

### TYPICAL MATERIAL PERFORMANCE

#### Physical Properties:

Shore Hardness, Durometer A	77
DIN EN ISO 868/15s	
Elongation, % ISO 527, Specimen no.5	350
Cross-head-speed: 50mm/min	
E-modulus	N/mm <sup>2</sup> 25
ASTM D638	(psi) (3,625)
Low Temperature Flexibility, °C ASTM D3111	-50
Temperature Creep Resistance, °C Henkel MH 11 Method	125
Glass Transition Temperature (T <sub>g</sub> ), °C DSC Second run	-45
Water Absorption (1 day, 23°C), %	1.4
Tensile at break	N/mm <sup>2</sup> 2.7
ISO 527, Specimen no.5	(psi) (390)
Yield Strength	N/mm <sup>2</sup> 2.6
ISO 527, Specimen no.5	(psi) (375)
Cross-head-speed: 50mm/min	

#### Electrical Properties:

Dielectric Constant / Dissipation Factor Open ended coaxial probe:	
@ 1MHz	4.1/0.105
@ 1GHz	2.8/0.038
@ 1.8GHz	2.7/0.029
Dielectric Strength, kV/mm IEC 60243	15
Volume Resistivity, ohm-cm DIN IEC 60093	0.6×10 <sup>12</sup>
Comparative Tracking Index @ 300 mm, volts IEC 60112	600



**GENERAL INFORMATION**

**This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or their strong oxidizing materials.**

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

**DIRECTIONS FOR USE**

1. Use gloves to minimize skin contact. DO NOT use solvents for cleaning hands.
2. The surfaces of the substrate must be dry and free from oil, grease, and dust.
3. Material has been formulated to provide the best possible moldability and as wide a molding latitude as possible.
4. Much of the final molding parameters will be determined by the mold design.
5. Molding temperature will vary from situation to situation, range shown on this data sheet is a starting range for process development.
6. When potting to a substrate with high thermal conductivity the use of a specific application temperature is required for good wetting.
7. Do not heat the product above the specified application temperature range.
8. When the product is not in use do not apply heat, this will degrade the quality of the product and in extreme cases cause carbonization or charring.
9. Carbonized material must be removed mechanically.
10. Removal of the thermoplastic material from the hot apparatus can be achieved with solvent free cleaning system, such as TECHNOMELT PA 62 (see separate technical information). Check for availability in your region.

**Storage:**

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

**Optimal Storage: Up to 28° C. Storage above 35° C can adversely affect the ability to handle and dispense the material.**

Material will absorb moisture from the air. Material from opened containers should be transferred immediately into airtight containers. Material should be stored in sealed containers in a cool location to maximize shelf life.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel 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 Henkel representative.

**Product Specifications**

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

**Approval and Certificate**

Please contact Henkel representative for related approval or certificate of this product.

**Data Ranges**

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23°C / 50% RH = 23±2°C / 50±5% RH

**Conversions**

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

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