LOW PRESSURE MOLDING SOLUTIONS FOR LED LIGHTING
THE BENEFITS OF LOW PRESSURE MOLDING IN LED LIGHTING

Effectiveness and simplicity define the TECHNOMELT solution for LED applications, which is why lighting specialists around the world depend on these novel materials.

With a streamlined and fast three-step technique, TECHNOMELT materials offer quick processing capabilities for high-throughput LED manufacturing.

- Fast processing for high-volume LED manufacturing
- Flexible design options to complement the varied LED applications — from single LED applications to multi-strip, large display applications
- Optically transparent materials for maximum light transmittance
- White material options to enhance reflection
- Watertight, UV-stable materials to minimize impact from long-term outdoor exposure
- Compatible material sets for robust design solutions

PROCESS

TRADITIONAL POTTING PROCESS FLOW

LOW PRESSURE PROCESS FLOW: THREE SIMPLE STEPS
## LOW PRESSURE MOLDING PRODUCTS FOR LED LIGHTING

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>DESCRIPTION</th>
<th>COLOR</th>
<th>PERFORMANCE TEMPERATURE</th>
<th>SHORE HARDNESS</th>
<th>SAFETY RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conductive</strong></td>
<td></td>
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<tr>
<td>TECHNOMELT TC 50</td>
<td>High-performance, filled thermoplastic polyamide formulated as a protective encapsulant for heat-generating devices requiring thermal management. This material allows encapsulation of fragile components without damage. Thermal conductivity is 0.65 W/mK.</td>
<td>Black</td>
<td>-40°C to 140°C</td>
<td>60D</td>
<td>UL 94 V-0</td>
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<td><strong>Specialty Technologies</strong></td>
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<tr>
<td>TECHNOMELT AS 4226</td>
<td>UV-stabilized thermoplastic material used in applications in which optical transparency is important to the functionality of the device. Allows for long-term exposure to UV light with minimal change to clarity or color.</td>
<td>Transparent</td>
<td>-40°C to 85°C</td>
<td>45D</td>
<td>UL 94 HB</td>
</tr>
<tr>
<td>TECHNOMELT PA 668 CLEAR</td>
<td>Thermoplastic polyamide designed for overmolding sensitive electronic devices. The material is clear in color and is UV stabilized to retain a high level of clarity after exposure to UV and heat.</td>
<td>Transparent</td>
<td>-25°C to 105°C</td>
<td>90A</td>
<td>N/A</td>
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<tr>
<td><strong>UV-Resistant</strong></td>
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<tr>
<td>TECHNOMELT PA 668</td>
<td>Thermoplastic polyamide that exhibits a crisp, bright white color with excellent UV and thermal stability and is ideal for outdoor use. Good adhesion to a range of substrates.</td>
<td>White</td>
<td>-25°C to 105°C</td>
<td>90A</td>
<td>UL 94 V-0</td>
</tr>
<tr>
<td>TECHNOMELT PA 6344</td>
<td>High-performance, UV-resistant thermoplastic polyamide that exhibits good adhesion to a variety of substrates including solder mask.</td>
<td>Black</td>
<td>-40°C to 100°C</td>
<td>76A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
LOW PRESSURE MOLDING PRODUCTS FOR LED LIGHTING

TECHNOMELT AS 4226
- Ultra-clear, optically transparent
- UV and thermally stabilized
- One-component product / no mixing
- Good adhesion to PCBs and components
- Novel copolymer technology makes it ideal for sensitive electronic components

TECHNOMELT PA 668
- White color maintained even when exposed to harsh external factors
- UV and thermally stabilized
- Superior molding and color integrity performance
- Ideal for indoor and outdoor LED lighting

TECHNOMELT PA 668 CLEAR
- Designed for applications where a high level of clarity is required
- UV and thermally stabilized to maintain its appearance after exposure to harsh environments
- Excellent adhesion to PCBs, plastics and flex circuits
- Improved compatibility with molding of sensitive electronics

TECHNOMELT PA 6344
- UV and thermal resistance
- Adheres well to a variety of substrates including plastic, glass and metals
- Good flexibility and mechanical strength
- Low durometer

TECHNOMELT TC 50
- Provides increased thermal transfer as power increases
- Dramatically improves cycle times over traditional potting materials
- UV, thermally and color stabilized
- UL rated
- Supports high-throughput manufacturing and improves scalability

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**THERMALLY CONDUCTIVE TECHNOMELT**

**TECHNOMELT TC 50**

TECHNOMELT TC 50, Henkel’s thermally conductive TECHNOMELT material innovation, combines the low-pressure, protective benefits of all TECHNOMELT materials with thermally conductive functional capabilities.

As an alternative to conventional potting techniques, TECHNOMELT TC 50 offers improved process and performance benefits along with thermal conductivity >0.5 W/mK for the dissipation of heat through the encapsulating material.

**BENEFITS**

- Heat dissipation through TECHNOMELT low pressure molding material
- Substantially decreases component temperature
- Stable filler dispersion that eliminates settling for continued low pressure molding
- Low-abrasive filler

**HENKEL’S TOTAL SOLUTIONS PORTFOLIO**

TECHNOMELT’s ease of use is matched only by the breadth of the portfolio and the robust performance of each material. With products that deliver a range of technology benefits including watertight protection, UV stability, thermal conductivity, optical transparency and reflectiveness, the TECHNOMELT line of materials provides LED manufacturers with the processability, reliability and cost-effectiveness required for a competitive advantage.