SONGWON is a leading specialist in products and technologies for the film and sheet industry.

Our broad portfolio of SONGSTOMER™ polyether- and polyester-based engineering materials enables us to design customized solutions for numerous film and sheet applications.

Thanks to their excellent physical and technical attributes, SONGSTOMER™ TPU polymers are widely used by film and sheet manufacturers. The products combine a variety of properties that help to prolong the life and enhance the look and feel of high-value end products.
SONGWON – Long-standing expertise in the development of TPU resins for the film and sheet industry.

Wide range of TPU polymers
- Suitable for highly demanding applications
- Cutting-edge quality and EHS standards

Comprehensive technical expertise
- Dedicated TPU testing laboratory in South Korea
- Ability to develop and supply customized TPU solutions

Proven reliability
- More than 35 years’ manufacturing experience in South Korea
- Backward integration into the production of polyester polyols
- Global sales organization and distribution channels in Asia, Europe, and North America

Strong commitment
- Significant investments to increase TPU production capacity
- Continuous innovation to meet new industry standards

SONGSTOMER™ TPU polymers are suitable for the manufacture of high-quality films and sheets and generate significant value for film and sheet manufacturers...

... Their excellent and consistent flow characteristics confer good processing and color stability and allow the production of highly transparent products, enhancing the look and feel of end products and minimizing waste.

... Their high resistance to tearing, cutting, puncturing, weathering, abrasion, oil and solvent, together with their general robustness, helps to prolong the life of the end product.

... Their stability at low temperatures boosts productivity because films and sheets retain their flexibility and do not become brittle.

Outstanding properties
- Excellent transparency in thin sections
- Very low gel content
- High abrasion resistance
- Weather and oil/solvent resistance
- Flexibility retention at low temperatures
- Good anti-blocking properties
- Processing stabilization

Demanding applications
- Protective films for mobile phones
- Foam-in-place seats
- Waterproof camping bags, tents
- Bed sheets
- Inflatable sporting goods
SONGSTOMER™ TPU products must be dried before processing. Recommended drying conditions: 70-80°C for 3-4 hours in a dehumidifying dryer. The moisture content should not exceed 0.05%. Avoid unnecessarily prolonged drying periods to prevent any TPU discoloration.

Storage conditions

SONGSTOMER™ TPU products are supplied in pellet form. The materials are packed in 25 kg aluminum-polyethylene bags. The materials must be stored in a cool and dark place. Once open, reseal the bags to protect the contents.

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---

### Properties

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Test Method</th>
<th>Units</th>
<th>P-7185A</th>
<th>P-8185AI</th>
<th>P-8185AC</th>
<th>HM-4000</th>
<th>P-3285A</th>
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<tbody>
<tr>
<td>Hardness</td>
<td>ASTM D2240</td>
<td>Shore A</td>
<td>87 ± 2</td>
<td>88 ± 2</td>
<td>87 ± 2</td>
<td>83 ± 2</td>
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<tr>
<td>Specific Gravity</td>
<td>ASTM D792</td>
<td>g/cm³</td>
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<tr>
<td>Tensile Strength</td>
<td>ASTM D412</td>
<td>kgf/cm²</td>
<td>420</td>
<td>450</td>
<td>400</td>
<td>250</td>
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<td>MPa</td>
<td>41</td>
<td>44</td>
<td>39</td>
<td>24.5</td>
<td>29.5</td>
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<tr>
<td>Tensile Stress at 100% Modulus</td>
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<td>kgf/cm²</td>
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<td>65</td>
<td>60</td>
<td>45</td>
<td>60</td>
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<tr>
<td></td>
<td>MPa</td>
<td>7</td>
<td>6.5</td>
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<td>6</td>
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<tr>
<td>Tensile Stress at 300% Modulus</td>
<td>ASTM D412</td>
<td>kgf/cm²</td>
<td>130</td>
<td>120</td>
<td>90</td>
<td>70</td>
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<td>MPa</td>
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<td>12</td>
<td>9</td>
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<td>Ultimate Elongation</td>
<td>ASTM D412</td>
<td>%</td>
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<td>600</td>
<td>450</td>
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<tr>
<td>Tear Strength</td>
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<td></td>
<td>N/mm</td>
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<td>98</td>
<td>88</td>
<td>78</td>
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</table>

The above are typical values and should not be used as specifications.

### Extrusion Conditions

<table>
<thead>
<tr>
<th>Extrusion Conditions</th>
<th>Zone 1</th>
<th>Zone 2</th>
<th>Zone 3</th>
<th>Adapter</th>
<th>Die</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>190</td>
<td>195</td>
<td>200</td>
<td>205</td>
<td>200</td>
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</tbody>
</table>

Extruder parameters: L/D: 26-30, compression ratio: 2.5 – 3.5
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Version 2, February 2018