

## SABIC Innovative Plastics ULTEM STM1600 PEI Copolymer

Category : Polymer , Thermoplastic , Polyetherimide (PEI)

### Material Notes:

Siltem 1600 is a flexible copolymer designed for wire and cable applications. It offers a halogen free (according VDE 0472) flame retardant solution that also offers low smoke emission and toxicity. It is an amber colored transparent material that can be selfcolored and easily processed on conventional equipment. The material may also have a fit in flexible profiles or injection molded parts.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-ULTEM-STM1600-PEI-Copolymer.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-ULTEM-STM1600-PEI-Copolymer.php)

| Physical Properties            | Metric  | English   | Comments     |
|--------------------------------|---|---|--------------|
| Specific Gravity               | 1.19 g/cc   | 1.19 g/cc   | ASTM D792    |
| Density                        | 1.19 g/cc   | 0.0430 lb/in <sup>3</sup>                             | ISO 1183     |
| Water Absorption               | 0.58 %<br>@Time 86400 sec                             | 0.58 %<br>@Time 24.0 hour                             | ISO 62-1     |
| Water Absorption at Saturation | 0.58 %  | 0.58 %  | ISO 62       |
| Linear Mold Shrinkage, Flow    | 0.0086 - 0.0101 cm/cm<br>@Thickness 3.20 mm           | 0.0086 - 0.0101 in/in<br>@Thickness 0.126 in          | SABIC Method |
| Melt Flow                      | 8.6 g/10 min<br>@Load 6.60 kg,<br>Temperature 295 Å°C | 8.6 g/10 min<br>@Load 14.6 lb,<br>Temperature 563 Å°F | ASTM D1238   |

| Mechanical Properties     | Metric   | English  | Comments                    |
|---------------------------|----------|----------|-----------------------------|
| Hardness, Shore D         | 72       | 72       | ASTM D2240                  |
| Tensile Strength at Break | 40.0 MPa | 5800 psi | Type I, 5 mm/min; ASTM D638 |
|                           | 41.0 MPa | 5950 psi | 50 mm/min; ISO 527          |
| Tensile Strength, Yield   | 42.0 MPa | 6090 psi | 50 mm/min; ISO 527          |
|                           | 43.0 MPa | 6240 psi | Type I, 5 mm/min; ASTM D638 |
| Elongation at Break       | 64 %     | 64 %     | Type I, 5 mm/min; ASTM D638 |
|                           | 74 %     | 74 %     | 50 mm/min; ISO 527          |
| Elongation at Yield       | 10 %     | 10 %     | Type I, 5 mm/min; ASTM D638 |
|                           | 10 %     | 10 %     | 50 mm/min; ISO 527          |
| Tensile Modulus           | 1.38 GPa | 200 ksi  | 1 mm/min; ISO 527           |

| Mechanical Properties          | Metric                    | English                    | Comments                          |
|--------------------------------|---------------------------|----------------------------|-----------------------------------|
| Flexural Strength              | 48.0 MPa                  | 6960 psi                   | ASTM D790                         |
| Flexural Yield Strength        | 48.0 MPa                  | 6960 psi                   | 1.3 mm/min, 50 mm span; ASTM D790 |
|                                | 55.0 MPa                  | 7980 psi                   | 2 mm/min; ISO 178                 |
| Flexural Modulus               | 1.25 GPa                  | 181 ksi                    | ASTM D790                         |
|                                | 1.25 GPa                  | 181 ksi                    | 1.3 mm/min, 50 mm span; ASTM D790 |
|                                | 1.25 GPa                  | 181 ksi                    | 2 mm/min; ISO 178                 |
| Izod Impact, Notched           | 4.12 J/cm                 | 7.72 ft-lb/in              | ASTM D256                         |
| Izod Impact, Notched (ISO)     | 36.0 kJ/m <sup>2</sup>    | 17.1 ft-lb/in <sup>2</sup> | 80*10*4; ISO 180/1A               |
|                                | 25.0 kJ/m <sup>2</sup>    | 11.9 ft-lb/in <sup>2</sup> | 80*10*4; ISO 180/1A               |
|                                | @Temperature -30.0<br>Â°C | @Temperature -22.0<br>Â°F  |                                   |
| Taber Abrasion, mg/1000 Cycles | 50                        | 50                         | CS-17, 1 kg; ASTM D1044           |

| Thermal Properties                          | Metric             | English              | Comments                         |
|---|--------------------|----------------------|----------------------------------|
| Transformation Temperature, Tg              | 195 Â°C            | 383 Â°F              | DMA                              |
| Deflection Temperature at 0.46 MPa (66 psi) | 144 Â°C            | 291 Â°F              | Flatw 80*10*4 sp=64mm; ISO 75/Bf |
| Deflection Temperature at 1.8 MPa (264 psi) | 80.0 Â°C           | 176 Â°F              | unannealed; ASTM D648            |
|   | @Thickness 3.20 mm | @Thickness 0.126 in  |                                  |
| Vicat Softening Point                       | 167 Â°C            | 333 Â°F              | Rate B/120; ISO 306              |
| Flammability, UL94                          | V-0                | V-0                  | UL 94 by SABIC-IP                |
|   | @Thickness 1.60 mm | @Thickness 0.0630 in |                                  |
| Oxygen Index                                | 48 %               | 48 %                 | ASTM D2863                       |

| Electrical Properties | Metric               | English              | Comments  |
|-----------------------|----------------------|----------------------|-----------|
| Volume Resistivity    | >= 1.00e+16 ohm-cm   | >= 1.00e+16 ohm-cm   | ASTM D257 |
| Surface Resistance    | >= 1.00e+15 ohm      | >= 1.00e+15 ohm      | ASTM D257 |
| Dielectric Constant   | 3.0                  | 3.0                  | ASTM D150 |
|                       | @Frequency 100000 Hz | @Frequency 100000 Hz |           |
|                       | 3.02                 | 3.02                 |           |

| Electrical Properties | Metric                   | English                  | Comments          |
|-----------------------|--------------------------|--------------------------|-------------------|
|                       | @Frequency 1.00e+6<br>Hz | @Frequency 1.00e+6<br>Hz |                   |
|                       | 3.14                     | 3.14                     | ASTM D150         |
|                       | @Frequency 100 Hz        | @Frequency 100 Hz        |                   |
| Dielectric Strength   | 16.6 kV/mm               | 422 kV/in                | in oil; ASTM D149 |
|                       | @Thickness 3.20 mm       | @Thickness 0.126 in      |                   |
| Dissipation Factor    | 0.0055                   | 0.0055                   | ASTM D150         |
|                       | @Frequency 1.00e+6<br>Hz | @Frequency 1.00e+6<br>Hz |                   |
|                       | 0.0064                   | 0.0064                   | ASTM D150         |
|                       | @Frequency 100000 Hz     | @Frequency 100000 Hz     |                   |
|                       | 0.014                    | 0.014                    | ASTM D150         |
|                       | @Frequency 100 Hz        | @Frequency 100 Hz        |                   |

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China