

## Technical Data Sheet

### *Schulaketon* GF15 4DE BLK



Polyketone, Aliphatic

#### Product Description

15% glass fiber reinforced aliphatic Polyketone, flame-retardant, halogen free

|                      |                         |
|----------------------|-------------------------|
| Processing Method    | Injection Molding       |
| Attribute            | Halogen Free; PFAS free |
| Additive             | Flame Retardant         |
| Filler/Reinforcement | Glass Fiber, 15%        |
| Resin ID             | PK GF15 FR(40)          |

| Typical Properties                                                           | Nominal Value | Units                   | Test Method    |
|------------------------------------------------------------------------------|---------------|-------------------------|----------------|
| <b>Physical</b>                                                              |               |                         |                |
| Melt Volume Flow Rate, (240 °C/5.0 kg)                                       | 20            | cm <sup>3</sup> /10 min | ISO 1133       |
| Density, (Method A)                                                          | 1.35          | g/cm <sup>3</sup>       | ISO 1183       |
| <b>Mechanical</b>                                                            |               |                         |                |
| Tensile Strain at Break, (Type 1A, 5 mm/min)                                 | 4.0           | %                       | ISO 527-2      |
| Flexural Modulus, (2.0 mm/min)                                               | 4300          | MPa                     | ISO 178        |
| Tensile Stress at Break, (Type 1A, 5 mm/min)                                 | 95.0          | MPa                     | ISO 527-2      |
| Tensile Modulus, (1 mm/min, Type 1A)                                         | 4900          | MPa                     | ISO 527-1      |
| Flexural Stress, (2.0 mm/min, 3.5%)                                          | 115           | MPa                     | ISO 178        |
| <b>Impact</b>                                                                |               |                         |                |
| Charpy Impact Strength - Notched                                             |               |                         |                |
| (23 °C, Type 1, Edgewise, Notch A)                                           | 13            | kJ/m <sup>2</sup>       | ISO 179        |
| (-30 °C, Type 1, Edgewise, Notch A)                                          | 8.0           | kJ/m <sup>2</sup>       | ISO 179        |
| Charpy Impact Strength - Unnotched                                           |               |                         |                |
| (23 °C, Type 1, Edgewise)                                                    | 70            | kJ/m <sup>2</sup>       | ISO 179        |
| (-30 °C, Type 1, Edgewise)                                                   | 65            | kJ/m <sup>2</sup>       | ISO 179        |
| <b>Hardness</b>                                                              |               |                         |                |
| Ball Pressure Test, (130 °C)                                                 | Pass          |                         | IEC 60695-10-2 |
| <b>Thermal</b>                                                               |               |                         |                |
| Vicat Softening Temperature                                                  |               |                         |                |
| (B (50N), 50 °C/h)                                                           | 205           | °C                      | ISO 306        |
| (A (10N), 50 °C/h)                                                           | 215           | °C                      | ISO 306        |
| Deflection Temperature Under Load Unannealed (0.45 MPa), (4.00 mm, Flatwise) | 214           | °C                      | ISO 75-2/B     |
| Deflection Temperature Under Load Unannealed (1.80 MPa), (4.00 mm, Flatwise) | 201           | °C                      | ISO 75-2/A     |

|                                  |          |        |                |
|----------------------------------|----------|--------|----------------|
| RTI Elec                         |          |        |                |
| (1.6 mm)                         | 50.0     | °C     | UL 746B        |
| (3.0 mm)                         | 50.0     | °C     | UL 746B        |
| (0.8 mm)                         | 50.0     | °C     | UL 746B        |
| (0.40 mm)                        | 50.0     | °C     | UL 746B        |
| (0.60 mm)                        | 50.0     | °C     | UL 746B        |
| RTI Imp                          |          |        |                |
| (1.6 mm)                         | 50.0     | °C     | UL 746B        |
| (3.0 mm)                         | 50.0     | °C     | UL 746B        |
| (0.8 mm)                         | 50.0     | °C     | UL 746B        |
| (0.40 mm)                        | 50.0     | °C     | UL 746B        |
| (0.60 mm)                        | 50.0     | °C     | UL 746B        |
| RTI Str                          |          |        |                |
| (1.6 mm)                         | 50.0     | °C     | UL 746B        |
| (3.0 mm)                         | 50.0     | °C     | UL 746B        |
| (0.8 mm)                         | 50.0     | °C     | UL 746B        |
| (0.40 mm)                        | 50.0     | °C     | UL 746B        |
| (0.60 mm)                        | 50.0     | °C     | UL 746B        |
| <b>Electrical</b>                |          |        |                |
| Volume Resistivity               | >1.0E+13 | ohm*m  | IEC 62631-3-1  |
| Comparative Tracking Index (CTI) | 600      | V      | IEC 60112      |
| High Amp Arc Ignition            |          |        | UL 746A        |
| Surface Resistivity              | >1.0E+15 | ohm    | IEC 60093      |
| <b>Flammable</b>                 |          |        |                |
| Hot-wire Ignition (HWI)          |          |        | UL 746A        |
| Burning Rate                     |          |        |                |
| (2.00 mm, Self-Extinguishing)    | 0.0      | mm/min | ISO 3795       |
| (2.00 mm, Self-Extinguishing)    | 0.0      | mm/min | FMVSS 302      |
| Glow Wire Flammability Index     |          |        |                |
| (3.0 mm)                         | 960      | °C     | IEC 60695-2-12 |
| (0.60 mm)                        | 960      | °C     | IEC 60695-2-12 |
| (0.8 mm)                         | 960      | °C     | IEC 60695-2-12 |
| (1.6 mm)                         | 960      | °C     | IEC 60695-2-12 |
| Glow Wire Ignition Temperature   |          |        |                |
| (3.0 mm)                         | 825      | °C     | IEC 60695-2-13 |
| (1.6 mm)                         | 850      | °C     | IEC 60695-2-13 |
| (0.60 mm)                        | 825      | °C     | IEC 60695-2-13 |
| (0.8 mm)                         | 825      | °C     | IEC 60695-2-13 |
| Oxygen Index                     | 30       | %      | ISO 4589-2     |
| <b>UL Information</b>            |          |        |                |
| Flame Rating                     |          |        |                |
| (1.6 mm)                         | 5VA      |        | UL 94          |
| (1.6 mm)                         | V-0      |        | UL 94          |
| (3.0 mm)                         | 5VA      |        | UL 94          |
| (3.0 mm)                         | V-0      |        | UL 94          |
| (0.8 mm)                         | V-0      |        | UL 94          |
| (0.40 mm)                        | V-0      |        | UL 94          |
| (0.60 mm)                        | V-0      |        | UL 94          |

| Flammability Classification |        |                      |
|-----------------------------|--------|----------------------|
| (0.40 mm)                   | V-0    | IEC 60695-11-10, -20 |
| (0.60 mm)                   | V-0    | IEC 60695-11-10, -20 |
| (0.8 mm)                    | V-0    | IEC 60695-11-10, -20 |
| (1.6 mm)                    | V-0    | IEC 60695-11-10, -20 |
| (1.6 mm)                    | 5VA    | IEC 60695-11-10, -20 |
| (3.0 mm)                    | V-0    | IEC 60695-11-10, -20 |
| (3.0 mm)                    | 5VA    | IEC 60695-11-10, -20 |
| UL File Number              | E86615 |                      |

| Injection Parameters   | Nominal Value | Units  |
|------------------------|---------------|--------|
| Drying Time            | 2.0 to 4.0    | hr     |
| Drying Temperature     | 80            | °C     |
| Suggested Max Moisture | 0.15          | %      |
| Screw Speed            | <250          | mm/sec |
| Processing (Melt) Temp | 230 to 250    | °C     |
| Injection Rate         | Slow-Moderate |        |
| Back Pressure          | 2.00 to 8.00  | MPa    |
| Mold Temperature       | 60 to 120     | °C     |