

Technical Data Sheet

## Schulaketon GF 30 4DE

Polyketone, Aliphatic  
LyondellBasell Industries  
Engineering Plastics

### Product Description

30% glass fiber reinforced aliphatic Polyketone, flame-retardant, halogen free

### General

|                        |                                     |
|------------------------|-------------------------------------|
| Filler / Reinforcement | • Glass Fiber, 30% Filler by Weight |
| Features               | • Flame Retardant • Halogen Free    |
| UL File Number         | • E86615                            |
| Processing Method      | • Injection Molding                 |
| Resin ID (ISO 1043)    | • PK GF30 FR(40)                    |

| Physical                                   | Nominal Value (English) | Nominal Value (SI) | Test Method    |
|--------------------------------------------|-------------------------|--------------------|----------------|
| Density                                    | 1.47 g/cm³              | 1.47 g/cm³         | ISO 1183/A     |
| Melt Volume-Flow Rate (MVR) (240°C/5.0 Kg) | 7.0 cm³/10min           | 7.0 cm³/10min      | ISO 1133       |
| Mechanical                                 | Nominal Value (English) | Nominal Value (SI) | Test Method    |
| Tensile Modulus                            | 1.23E+6 psi             | 8500 MPa           | ISO 527-1/1A/1 |
| Tensile Stress (Break)                     | 18900 psi               | 130 MPa            | ISO 527-2/1A/5 |
| Tensile Strain (Break)                     | 4.5 %                   | 4.5 %              | ISO 527-2/1A/5 |
| Flexural Modulus <sup>1</sup>              | 1.28E+6 psi             | 8800 MPa           | ISO 178        |
| Flexural Stress <sup>1</sup> (3.5% Strain) | 27600 psi               | 190 MPa            | ISO 178        |
| Impact                                     | Nominal Value (English) | Nominal Value (SI) | Test Method    |
| Charpy Notched Impact Strength             |                         |                    | ISO 179/1eA    |
| -22°F (-30°C)                              | 3.8 ft·lb/in²           | 7.9 kJ/m²          |                |
| 73°F (23°C)                                | 6.1 ft·lb/in²           | 13 kJ/m²           |                |
| Charpy Unnotched Impact Strength           |                         |                    | ISO 179/1eU    |
| -22°F (-30°C)                              | 31 ft·lb/in²            | 65 kJ/m²           |                |
| 73°F (23°C)                                | 32 ft·lb/in²            | 68 kJ/m²           |                |
| Thermal                                    | Nominal Value (English) | Nominal Value (SI) | Test Method    |
| Deflection Temperature Under Load          |                         |                    |                |
| 66 Psi (0.45 Mpa), Unannealed              | 419 °F                  | 215 °C             | ISO 75-2/Bf    |
| 264 Psi (1.8 Mpa), Unannealed              | 403 °F                  | 206 °C             | ISO 75-2/Af    |
| Vicat Softening Temperature                |                         |                    |                |
| --                                         | 406 °F                  | 208 °C             | ISO 306/B50    |
| --                                         | 421 °F                  | 216 °C             | ISO 306/A50    |
| Ball Pressure Test (266°F (130°C))         | Pass                    | Pass               | IEC 60695-10-2 |
| RTI Elec                                   |                         |                    | UL 746B        |
| 0.016 In (0.40 Mm)                         | 122 °F                  | 50.0 °C            |                |
| 0.024 In (0.60 Mm)                         | 122 °F                  | 50.0 °C            |                |
| 0.031 In (0.8 Mm)                          | 122 °F                  | 50.0 °C            |                |
| 0.06 In (1.6 Mm)                           | 122 °F                  | 50.0 °C            |                |
| 0.12 In (3.0 Mm)                           | 122 °F                  | 50.0 °C            |                |
| RTI Imp                                    |                         |                    | UL 746B        |
| 0.016 In (0.40 Mm)                         | 122 °F                  | 50.0 °C            |                |
| 0.024 In (0.60 Mm)                         | 122 °F                  | 50.0 °C            |                |
| 0.031 In (0.8 Mm)                          | 122 °F                  | 50.0 °C            |                |
| 0.06 In (1.6 Mm)                           | 122 °F                  | 50.0 °C            |                |
| 0.12 In (3.0 Mm)                           | 122 °F                  | 50.0 °C            |                |

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| Thermal                                  | Nominal Value (English) | Nominal Value (SI) | Test Method                      |
|------------------------------------------|-------------------------|--------------------|----------------------------------|
| RTI Str                                  |                         |                    | UL 746B                          |
| 0.016 In (0.40 Mm)                       | 122 °F                  | 50.0 °C            |                                  |
| 0.024 In (0.60 Mm)                       | 122 °F                  | 50.0 °C            |                                  |
| 0.031 In (0.8 Mm)                        | 122 °F                  | 50.0 °C            |                                  |
| 0.06 In (1.6 Mm)                         | 122 °F                  | 50.0 °C            |                                  |
| 0.12 In (3.0 Mm)                         | 122 °F                  | 50.0 °C            |                                  |
| Electrical                               | Nominal Value (English) | Nominal Value (SI) | Test Method                      |
| Surface Resistivity                      | > 1.0E+15 ohms          | > 1.0E+15 ohms     | IEC 60093                        |
| Volume Resistivity                       | > 1.0E+13 ohms·m        | > 1.0E+13 ohms·m   | IEC 62631-3-1                    |
| Electric Strength <sup>2</sup>           |                         |                    | IEC 60243-1                      |
| 73°F (23°C), 0.0394 In (1.00 Mm), In Oil | 810 V/mil               | 32 kV/mm           |                                  |
| Comparative Tracking Index               | 600 V                   | 600 V              | IEC 60112                        |
| High Amp Arc Ignition (HAI)              |                         |                    | UL 746A                          |
| 0.016 In (0.40 Mm)                       | PLC 0                   | PLC 0              |                                  |
| 0.024 In (0.60 Mm)                       | PLC 0                   | PLC 0              |                                  |
| 0.03 In (0.8 Mm)                         | PLC 0                   | PLC 0              |                                  |
| 0.06 In (1.6 Mm)                         | PLC 0                   | PLC 0              |                                  |
| 0.12 In (3.0 Mm)                         | PLC 0                   | PLC 0              |                                  |
| Hot-wire Ignition (HWI)                  |                         |                    | UL 746A                          |
| 0.016 In (0.40 Mm)                       | PLC 0                   | PLC 0              |                                  |
| 0.024 In (0.60 Mm)                       | PLC 0                   | PLC 0              |                                  |
| 0.03 In (0.8 Mm)                         | PLC 0                   | PLC 0              |                                  |
| 0.06 In (1.6 Mm)                         | PLC 0                   | PLC 0              |                                  |
| 0.12 In (3.0 Mm)                         | PLC 0                   | PLC 0              |                                  |
| Flammability                             | Nominal Value (English) | Nominal Value (SI) | Test Method                      |
| Burning Rate                             |                         |                    |                                  |
| 0.0787 In (2.00 Mm), Self-extinguishing  | 0.0 in/min              | 0.0 mm/min         | ISO 3795                         |
| 0.0787 In (2.00 Mm), Self-extinguishing  | 0.0 in/min              | 0.0 mm/min         | FMVSS 302                        |
| Flame Rating                             |                         |                    |                                  |
| 0.016 In (0.40 Mm)                       | V-0                     | V-0                | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.024 In (0.60 Mm)                       | V-0                     | V-0                | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.031 In (0.8 Mm)                        | V-0                     | V-0                | UL 94                            |
| 0.06 In (1.6 Mm)                         | • V-0<br>• 5VA          | • V-0<br>• 5VA     | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.12 In (3.0 Mm)                         | • V-0<br>• 5VA          | • V-0<br>• 5VA     | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.03 In (0.8 Mm)                         | V-0                     | V-0                | IEC 60695-11-10,<br>-20          |
| Glow Wire Flammability Index             |                         |                    | IEC 60695-2-12                   |
| 0.024 In (0.60 Mm)                       | 1760 °F                 | 960 °C             |                                  |
| 0.031 In (0.8 Mm)                        | 1760 °F                 | 960 °C             |                                  |
| 0.06 In (1.6 Mm)                         | 1760 °F                 | 960 °C             |                                  |
| 0.12 In (3.0 Mm)                         | 1760 °F                 | 960 °C             |                                  |

Technical Data Sheet

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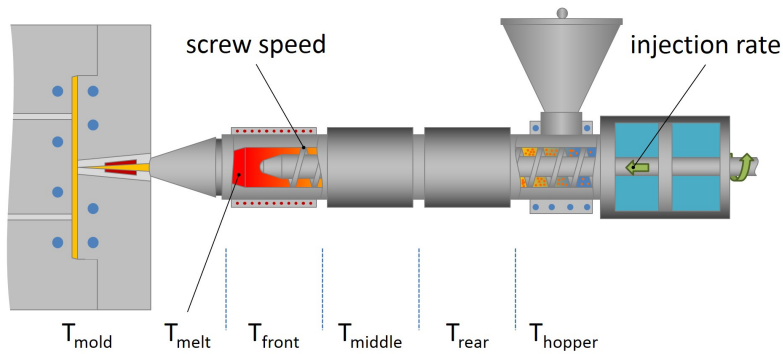
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| Flammability                   | Nominal Value (English) | Nominal Value (SI) | Test Method    |
|--------------------------------|-------------------------|--------------------|----------------|
| Glow Wire Ignition Temperature |                         |                    | IEC 60695-2-13 |
| 0.024 In (0.60 Mm)             | 1520 °F                 | 825 °C             |                |
| 0.031 In (0.8 Mm)              | 1520 °F                 | 825 °C             |                |
| 0.06 In (1.6 Mm)               | 1560 °F                 | 850 °C             |                |
| 0.12 In (3.0 Mm)               | 1520 °F                 | 825 °C             |                |
| Oxygen Index                   | 30 %                    | 30 %               | ISO 4589-2     |

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| Injection              | Nominal Value (English) | Nominal Value (SI) |
|------------------------|-------------------------|--------------------|
| Drying Temperature     | 176 °F                  | 80 °C              |
| Drying Time            | 2.0 to 4.0 hr           | 2.0 to 4.0 hr      |
| Suggested Max Moisture | 0.15 %                  | 0.15 %             |
| Processing (Melt) Temp | 446 to 482 °F           | 230 to 250 °C      |
| Mold Temperature       | 140 to 212 °F           | 60 to 100 °C       |
| Injection Rate         | Slow-Moderate           | Slow-Moderate      |
| Back Pressure          | 290 to 1160 psi         | 2.00 to 8.00 MPa   |
| Screw Speed            | < 591 in/min            | < 15 m/min         |

### Injection Notes

Before start, nozzle, screw, barrel and hot-runner have to be cleaned with Polyolefin. Contamination of other material leads to degradation or crosslinking of SCHULAKETON®.

Avoid shut down for more than 8 minutes at moulding temperature, because of degradation and crosslinking of SCHULAKETON®. Purge with Polyolefin!

Mould surfaces in contact with melt are recommended to be of non-corrosive steel, chrome content >12%

### Notes

<sup>1</sup> 0.079 in/min (2.0 mm/min)

<sup>2</sup> 2000 V/sec

### Notes

These are typical property values not to be construed as specification limits.