

Technical Data Sheet

# Schulamid 6 GF 15 FR 4 K1681

Polyamide 6  
LyondellBasell Industries  
Engineering Plastics

## Product Description

15% glass fibre reinforced flame-retardant Polyamide 6 grade without PBDE

## General

|                        |                                     |
|------------------------|-------------------------------------|
| Filler / Reinforcement | • Glass Fiber, 15% Filler by Weight |
| Features               | • Flame Retardant                   |
| UL File Number         | • E86615                            |
| Processing Method      | • Injection Molding                 |
| Resin ID (ISO 1043)    | • PA6 GF15 FR(17+30)                |

| Physical | Dry  | Conditioned | Unit              | Test Method |
|----------|------|-------------|-------------------|-------------|
| Density  | 1.38 | --          | g/cm <sup>3</sup> | ISO 1183/A  |

|                  |     |    |                    |         |
|------------------|-----|----|--------------------|---------|
| Viscosity Number | 145 | -- | cm <sup>3</sup> /g | ISO 307 |
|------------------|-----|----|--------------------|---------|

| Mechanical             | Dry               | Conditioned      | Unit         | Test Method    |
|------------------------|-------------------|------------------|--------------|----------------|
| Tensile Modulus        | 1.03E+6<br>(7100) | 580000<br>(4000) | psi<br>(MPa) | ISO 527-1/1A/1 |
| Tensile Stress (Break) | 17000<br>(117)    | 10300<br>(71.0)  | psi<br>(MPa) | ISO 527-2/1A/5 |
| Tensile Strain (Break) | 3.5               | 8.5              | %            | ISO 527-2/1A/5 |

| Impact                           | Dry          | Conditioned | Unit                                          | Test Method |
|----------------------------------|--------------|-------------|-----------------------------------------------|-------------|
| Charpy Notched Impact Strength   |              |             |                                               | ISO 179/1eA |
| -22°F (-30°C)                    | 2.9<br>(6.0) | --          | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| 73°F (23°C)                      | 4.3<br>(9.0) | 6.7<br>(14) | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| Charpy Unnotched Impact Strength |              |             |                                               | ISO 179/1eU |
| -22°F (-30°C)                    | 26<br>(55)   | --          | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| 73°F (23°C)                      | 29<br>(60)   | 33<br>(70)  | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |

| Thermal                            | Dry          | Conditioned | Unit       | Test Method    |
|------------------------------------|--------------|-------------|------------|----------------|
| Deflection Temperature Under Load  |              |             |            |                |
| 66 Psi (0.45 Mpa), Unannealed      | 433<br>(223) | --          | °F<br>(°C) | ISO 75-2/Bf    |
| 264 Psi (1.8 Mpa), Unannealed      | 397<br>(203) | --          | °F<br>(°C) | ISO 75-2/Af    |
| Ball Pressure Test (392°F (200°C)) | Pass         | --          |            | IEC 60695-10-2 |
| RTI Elec                           |              |             |            | UL 746B        |
| 0.015 In (0.38 Mm)                 | 266<br>(130) | --          | °F<br>(°C) |                |
| 0.030 In (0.75 Mm)                 | 266<br>(130) | --          | °F<br>(°C) |                |
| 0.06 In (1.5 Mm)                   | 266<br>(130) | --          | °F<br>(°C) |                |
| 0.12 In (3.0 Mm)                   | 266<br>(130) | --          | °F<br>(°C) |                |

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| Thermal                                  | Dry           | Conditioned | Unit               | Test Method   |
|------------------------------------------|---------------|-------------|--------------------|---------------|
| RTI Imp                                  |               |             |                    | UL 746B       |
| 0.015 In (0.38 Mm)                       | 167<br>(75.0) | --          | °F<br>(°C)         |               |
| 0.030 In (0.75 Mm)                       | 194<br>(90.0) | --          | °F<br>(°C)         |               |
| 0.06 In (1.5 Mm)                         | 212<br>(100)  | --          | °F<br>(°C)         |               |
| 0.12 In (3.0 Mm)                         | 212<br>(100)  | --          | °F<br>(°C)         |               |
| RTI Str                                  |               |             |                    | UL 746B       |
| 0.015 In (0.38 Mm)                       | 212<br>(100)  | --          | °F<br>(°C)         |               |
| 0.030 In (0.75 Mm)                       | 230<br>(110)  | --          | °F<br>(°C)         |               |
| 0.06 In (1.5 Mm)                         | 248<br>(120)  | --          | °F<br>(°C)         |               |
| 0.12 In (3.0 Mm)                         | 248<br>(120)  | --          | °F<br>(°C)         |               |
| Electrical                               | Dry           | Conditioned | Unit               | Test Method   |
| Surface Resistivity                      | > 1.0E+15     | --          | ohms               | IEC 60093     |
| Volume Resistivity                       | > 1.0E+13     | > 1.0E+10   | ohms·m             | IEC 62631-3-1 |
| Comparative Tracking Index               | 275           | --          | V                  | IEC 60112     |
| High Amp Arc Ignition (HAI)              |               |             |                    | UL 746A       |
| 0.015 In (0.38 Mm)                       | PLC 0         | --          |                    |               |
| 0.030 In (0.75 Mm)                       | PLC 0         | --          |                    |               |
| 0.06 In (1.5 Mm)                         | PLC 0         | --          |                    |               |
| 0.12 In (3.0 Mm)                         | PLC 0         | --          |                    |               |
| Hot-wire Ignition (HWI)                  |               |             |                    | UL 746A       |
| 0.015 In (0.38 Mm)                       | PLC 3         | --          |                    |               |
| 0.030 In (0.75 Mm)                       | PLC 0         | --          |                    |               |
| 0.06 In (1.5 Mm)                         | PLC 0         | --          |                    |               |
| 0.12 In (3.0 Mm)                         | PLC 0         | --          |                    |               |
| Flammability                             | Dry           | Conditioned | Unit               | Test Method   |
| Burning Rate                             |               |             |                    | ISO 3795      |
| 0.0150 In (0.380 Mm), Self-extinguishing | 0.0           | --          | in/min<br>(mm/min) |               |
| 0.0295 In (0.750 Mm), Self-extinguishing | 0.0           | --          | in/min<br>(mm/min) |               |
| 0.0591 In (1.50 Mm), Self-extinguishing  | 0.0           | --          | in/min<br>(mm/min) |               |
| 0.118 In (3.00 Mm), Self-extinguishing   | 0.0           | --          | in/min<br>(mm/min) |               |

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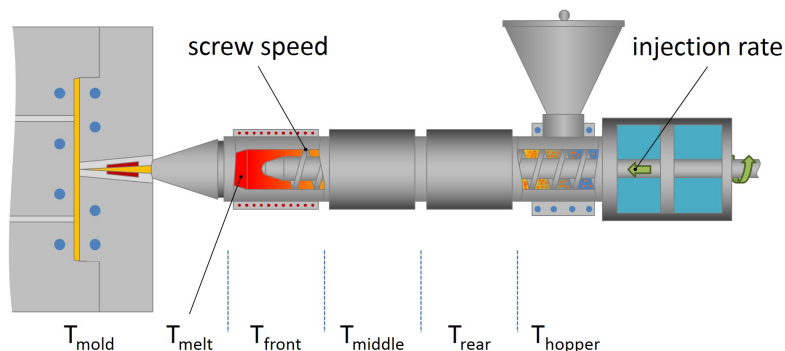
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| Flammability                   | Dry           | Conditioned | Unit       | Test Method                      |
|--------------------------------|---------------|-------------|------------|----------------------------------|
| Flame Rating                   |               |             |            | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.015 In (0.38 Mm)             | V-2           | --          |            |                                  |
| 0.030 In (0.75 Mm)             | V-2           | --          |            |                                  |
| 0.06 In (1.5 Mm)               | V-2           | --          |            |                                  |
| 0.12 In (3.0 Mm)               | V-2           | --          |            |                                  |
| Glow Wire Flammability Index   |               |             |            | IEC 60695-2-12                   |
| 0.015 In (0.38 Mm)             | 1560<br>(850) | --          | °F<br>(°C) |                                  |
| 0.030 In (0.75 Mm)             | 1760<br>(960) | --          | °F<br>(°C) |                                  |
| 0.06 In (1.5 Mm)               | 1760<br>(960) | --          | °F<br>(°C) |                                  |
| 0.12 In (3.0 Mm)               | 1760<br>(960) | --          | °F<br>(°C) |                                  |
| Glow Wire Ignition Temperature |               |             |            | IEC 60695-2-13                   |
| 0.015 In (0.38 Mm)             | 1520<br>(825) | --          | °F<br>(°C) |                                  |
| 0.030 In (0.75 Mm)             | 1650<br>(900) | --          | °F<br>(°C) |                                  |
| 0.06 In (1.5 Mm)               | 1650<br>(900) | --          | °F<br>(°C) |                                  |
| 0.12 In (3.0 Mm)               | 1650<br>(900) | --          | °F<br>(°C) |                                  |
| Oxygen Index                   | 26            | --          | %          | ISO 4589-2                       |

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| Injection              | Dry (English)   | Dry (SI)         |
|------------------------|-----------------|------------------|
| Drying Temperature     | 176 °F          | 80 °C            |
| Drying Time            | 4.0 to 6.0 hr   | 4.0 to 6.0 hr    |
| Suggested Max Moisture | 0.10 %          | 0.10 %           |
| Processing (Melt) Temp | 464 to 500 °F   | 240 to 260 °C    |
| Mold Temperature       | 140 to 194 °F   | 60 to 90 °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

Mould surface contacting melt should  
be of non-corrosive steel (content of chrome > 12%)

### Notes

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