

Technical Data Sheet

# Schulamid 6 MV 14 GW FR

Polyamide 6  
LyondellBasell Industries  
Engineering Plastics

## Product Description

Medium viscosity flame-retardant Polyamide 6 grade; V-0; GWIT 775°C; halogen free

## General

|                     |                                                                                       |                                                                                       |
|---------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Features            | <ul style="list-style-type: none"><li>Antimony Free</li><li>Flame Retardant</li></ul> | <ul style="list-style-type: none"><li>Halogen Free</li><li>Medium Viscosity</li></ul> |
| UL File Number      | E86615                                                                                |                                                                                       |
| Processing Method   | Injection Molding                                                                     |                                                                                       |
| Resin ID (ISO 1043) | PA 6 FR(30)                                                                           |                                                                                       |

| Physical | Dry  | Conditioned | Unit              | Test Method |
|----------|------|-------------|-------------------|-------------|
| Density  | 1.19 | --          | 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                      | 580000<br>(4000) | 203000<br>(1400) | psi<br>(MPa) | ISO 527-1/1A/1  |
| Tensile Stress (Yield)               | 11600<br>(80.0)  | 6090<br>(42.0)   | psi<br>(MPa) | ISO 527-2/1A/50 |
| Tensile Strain (Yield)               | 3.4              | 20               | %            | ISO 527-2/1A/50 |
| Flexural Modulus                     | 638000<br>(4400) | 255000<br>(1760) | psi<br>(MPa) | ISO 178         |
| Flexural Stress                      | 18900<br>(130)   | 6960<br>(48.0)   | psi<br>(MPa) | ISO 178         |
| Flexural Strain at Flexural Strength | 5.5              | --               | %            | ISO 178         |

| Impact                           | Dry                                                 | Conditioned  | Unit                                          | Test Method |
|----------------------------------|-----------------------------------------------------|--------------|-----------------------------------------------|-------------|
| Charpy Notched Impact Strength   |                                                     |              |                                               | ISO 179/1eA |
| -22°F (-30°C)                    | 1.5<br>(3.2)                                        | --           | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| 73°F (23°C)                      | 1.5<br>(3.2)                                        | 3.4<br>(7.2) | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| Charpy Unnotched Impact Strength |                                                     |              |                                               | ISO 179/1eU |
| -22°F (-30°C)                    | 29<br>(60)                                          | --           | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| 73°F (23°C)                      | 33 ft·lb/in <sup>2</sup><br>(70 kJ/m <sup>2</sup> ) | No Break     | (kJ/m <sup>2</sup> )                          |             |

| Thermal                           | Dry           | Conditioned | Unit       | Test Method |
|-----------------------------------|---------------|-------------|------------|-------------|
| Deflection Temperature Under Load |               |             |            |             |
| 66 Psi (0.45 Mpa), Unannealed     | 388<br>(198)  | --          | °F<br>(°C) | ISO 75-2/Bf |
| 264 Psi (1.8 Mpa), Unannealed     | 187<br>(86.0) | --          | °F<br>(°C) | ISO 75-2/Af |
| Vicat Softening Temperature       |               |             |            |             |
| --                                | 397<br>(203)  | --          | °F<br>(°C) | ISO 306/B50 |
| --                                | 421<br>(216)  | --          | °F<br>(°C) | ISO 306/A50 |

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| Thermal                            | Dry           | Conditioned | Unit       | Test Method    |
|------------------------------------|---------------|-------------|------------|----------------|
| 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) |                |
| RTI Imp                            |               |             |            | UL 746B        |
| 0.015 In (0.38 Mm)                 | 176<br>(80.0) | --          | °F<br>(°C) |                |
| 0.030 In (0.75 Mm)                 | 176<br>(80.0) | --          | °F<br>(°C) |                |
| 0.06 In (1.5 Mm)                   | 185<br>(85.0) | --          | °F<br>(°C) |                |
| 0.12 In (3.0 Mm)                   | 185<br>(85.0) | --          | °F<br>(°C) |                |
| RTI Str                            |               |             |            | UL 746B        |
| 0.015 In (0.38 Mm)                 | 221<br>(105)  | --          | °F<br>(°C) |                |
| 0.030 In (0.75 Mm)                 | 221<br>(105)  | --          | °F<br>(°C) |                |
| 0.06 In (1.5 Mm)                   | 239<br>(115)  | --          | °F<br>(°C) |                |
| 0.12 In (3.0 Mm)                   | 239<br>(115)  | --          | °F<br>(°C) |                |
| Electrical                         | Dry           | Conditioned | Unit       | Test Method    |
| Surface Resistivity                | > 1.0E+15     | --          | ohms       | IEC 60093      |
| Volume Resistivity                 | > 1.0E+13     | --          | ohms·m     | IEC 62631-3-1  |
| Comparative Tracking Index         | 600           | --          | V          | IEC 60112      |
| High Amp Arc Ignition (HAI)        |               |             |            | UL 746A        |
| 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        |
| 0.030 In (0.75 Mm)                 | PLC 3         | --          |            |                |
| 0.06 In (1.5 Mm)                   | PLC 3         | --          |            |                |
| 0.12 In (3.0 Mm)                   | PLC 2         | --          |            |                |

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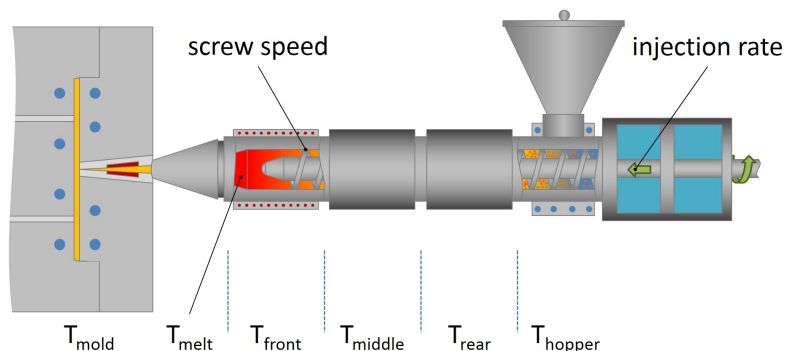
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| Flammability                             | Dry           | Conditioned | Unit               | Test Method                      |
|------------------------------------------|---------------|-------------|--------------------|----------------------------------|
| Burning Rate                             |               |             |                    | ISO 3795                         |
| 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) |                                  |
| Flame Rating                             |               |             |                    | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.016 In (0.40 Mm)                       | V-0           | --          |                    |                                  |
| 0.030 In (0.75 Mm)                       | V-0           | --          |                    |                                  |
| 0.06 In (1.5 Mm)                         | V-0           | --          |                    |                                  |
| 0.12 In (3.0 Mm)                         | V-0           | --          |                    |                                  |
| Glow Wire Flammability Index             |               |             |                    | IEC 60695-2-12                   |
| 0.020 In (0.50 Mm)                       | 1760<br>(960) | --          | °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                   |
| 0.020 In (0.50 Mm)                       | 1430<br>(775) | --          | °F<br>(°C)         |                                  |
| 0.030 In (0.75 Mm)                       | 1430<br>(775) | --          | °F<br>(°C)         |                                  |
| 0.06 In (1.5 Mm)                         | 1430<br>(775) | --          | °F<br>(°C)         |                                  |
| 0.12 In (3.0 Mm)                         | 1430<br>(775) | --          | °F<br>(°C)         |                                  |
| Oxygen Index                             | 31            | --          | %                  | 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 | 0.04 to 0.10 %  | 0.04 to 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       |

### Notes

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