

# Schulamid 6 NV 12 FR

Polyamide 6  
LyondellBasell Industries  
Engineering Plastics

## Product Description

Low viscosity flame-retardant Polyamide 6 grade; halogen and phosphorus-free

## General

|                     |                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Features            | <ul style="list-style-type: none"> <li>Flame Retardant</li> <li>Halogen Free</li> <li>Low (to None) Phosphorus Content</li> <li>Low Viscosity</li> </ul> |
| UL File Number      | E86615                                                                                                                                                   |
| Processing Method   | Injection Molding                                                                                                                                        |
| Resin ID (ISO 1043) | PA6 FR(30)                                                                                                                                               |

| Physical | Dry | Conditioned | Unit | Test Method |
|----------|-----|-------------|------|-------------|
|----------|-----|-------------|------|-------------|

|                  |      |    |                    |            |
|------------------|------|----|--------------------|------------|
| Density          | 1.15 | -- | g/cm <sup>3</sup>  | ISO 1183/A |
| Viscosity Number | 130  | -- | cm <sup>3</sup> /g | ISO 307    |

| Mechanical | Dry | Conditioned | Unit | Test Method |
|------------|-----|-------------|------|-------------|
|------------|-----|-------------|------|-------------|

|                        |                  |                  |              |                 |
|------------------------|------------------|------------------|--------------|-----------------|
| Tensile Modulus        | 493000<br>(3400) | 203000<br>(1400) | psi<br>(MPa) | ISO 527-1/1A/1  |
| Tensile Stress (Yield) | 10200<br>(70.0)  | 5800<br>(40.0)   | psi<br>(MPa) | ISO 527-2/1A/50 |
| Tensile Strain (Yield) | 4.0              | 15               | %            | ISO 527-2/1A/50 |

| Impact | Dry | Conditioned | Unit | Test Method |
|--------|-----|-------------|------|-------------|
|--------|-----|-------------|------|-------------|

|                                  |              |              |                                               |             |
|----------------------------------|--------------|--------------|-----------------------------------------------|-------------|
| Charpy Notched Impact Strength   |              |              |                                               | ISO 179/1eA |
| -22°F (-30°C)                    | 1.7<br>(3.5) | 2.4<br>(5.0) | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| 73°F (23°C)                      | 1.9<br>(4.0) | 7.1<br>(15)  | ft·lb/in <sup>2</sup><br>(kJ/m <sup>2</sup> ) |             |
| Charpy Unnotched Impact Strength |              |              |                                               | ISO 179/1eU |
| -22°F (-30°C)                    | No Break     | No Break     |                                               |             |
| 73°F (23°C)                      | No Break     | No Break     |                                               |             |

| Thermal | Dry | Conditioned | Unit | Test Method |
|---------|-----|-------------|------|-------------|
|---------|-----|-------------|------|-------------|

|                                    |               |    |            |                |
|------------------------------------|---------------|----|------------|----------------|
| Deflection Temperature Under Load  |               |    |            |                |
| 66 Psi (0.45 Mpa), Unannealed      | 392<br>(200)  | -- | °F<br>(°C) | ISO 75-2/Bf    |
| 264 Psi (1.8 Mpa), Unannealed      | 194<br>(90.0) | -- | °F<br>(°C) | ISO 75-2/Af    |
| Vicat Softening Temperature        |               |    |            |                |
| --                                 | 397<br>(203)  | -- | °F<br>(°C) | ISO 306/B50    |
| --                                 | 424<br>(218)  | -- | °F<br>(°C) | ISO 306/A50    |
| Ball Pressure Test (392°F (200°C)) | Pass          | -- |            | IEC 60695-10-2 |



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| Thermal                                  | Dry           | Conditioned | Unit               | Test Method   |
|------------------------------------------|---------------|-------------|--------------------|---------------|
| RTI Elec                                 |               |             |                    | UL 746B       |
| 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       |
| 0.030 In (0.75 Mm)                       | 167<br>(75.0) | --          | °F<br>(°C)         |               |
| 0.06 In (1.5 Mm)                         | 167<br>(75.0) | --          | °F<br>(°C)         |               |
| 0.12 In (3.0 Mm)                         | 176<br>(80.0) | --          | °F<br>(°C)         |               |
| RTI Str                                  |               |             |                    | UL 746B       |
| 0.030 In (0.75 Mm)                       | 203<br>(95.0) | --          | °F<br>(°C)         |               |
| 0.06 In (1.5 Mm)                         | 203<br>(95.0) | --          | °F<br>(°C)         |               |
| 0.12 In (3.0 Mm)                         | 203<br>(95.0) | --          | °F<br>(°C)         |               |
| Electrical                               | Dry           | Conditioned | Unit               | Test Method   |
| Surface Resistivity                      | > 1.0E+15     | > 1.0E+12   | ohms               | IEC 60093     |
| Volume Resistivity                       | > 1.0E+13     | > 1.0E+10   | 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 3         | --          |                    |               |
| 0.06 In (1.5 Mm)                         | PLC 3         | --          |                    |               |
| 0.12 In (3.0 Mm)                         | PLC 2         | --          |                    |               |
| Hot-wire Ignition (HWI)                  |               |             |                    | UL 746A       |
| 0.75 In (19.1 Mm)                        | PLC 0         | --          |                    |               |
| 1.50 In (38.1 Mm)                        | PLC 0         | --          |                    |               |
| 3.00 In (76.2 Mm)                        | PLC 0         | --          |                    |               |
| 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) |               |





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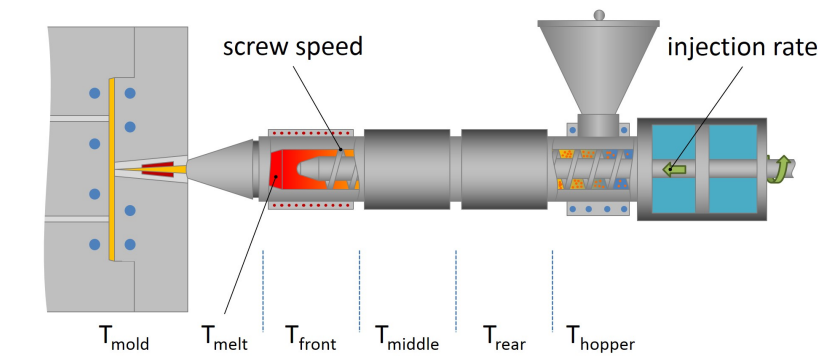
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| Flammability                   | Dry           | Conditioned | Unit       | Test Method                      |
|--------------------------------|---------------|-------------|------------|----------------------------------|
| Flame Rating                   |               |             |            | UL 94<br>IEC 60695-11-10,<br>-20 |
| 0.015 In (0.38 Mm)             | V-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                   |
| 0.015 In (0.38 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                   |
| 0.015 In (0.38 Mm)             | 1380<br>(750) | --          | °F<br>(°C) |                                  |
| 0.06 In (1.5 Mm)               | 1380<br>(750) | --          | °F<br>(°C) |                                  |
| 0.12 In (3.0 Mm)               | 1380<br>(750) | --          | °F<br>(°C) |                                  |
| Oxygen Index                   | 36            | --          | %          | 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  |
| Screw Speed            | < 591 in/min   | < 15 m/min     |

Notes

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

