

## Technical Data Sheet

### *Schulamid 6* MV14 FR YL 962104

Polyamide 6

#### Product Description

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

|                          |                                |
|--------------------------|--------------------------------|
| <b>Processing Method</b> | Injection Molding              |
| <b>Attribute</b>         | Halogen Free; Medium Viscosity |
| <b>Additive</b>          | Flame Retardant                |
| <b>Resin ID</b>          | PA 6 FR(30)                    |

| Typical Properties                               | Nominal Value | Units              | Test Method    |
|--------------------------------------------------|---------------|--------------------|----------------|
| <b>Physical</b>                                  |               |                    |                |
| Density, (Method A)                              | 1.17          | g/cm <sup>3</sup>  | ISO 1183       |
| Viscosity Number                                 | 145           | cm <sup>3</sup> /g | ISO 307        |
| <b>Mechanical</b>                                |               |                    |                |
| Tensile Stress at Yield                          |               |                    |                |
| (Type 1A, 50 mm/min)                             | 80.0          | MPa                | ISO 527-2      |
| (Type 1A, 50 mm/min) - Conditioned               | 38.0          | MPa                | ISO 527-2      |
| Tensile Strain at Yield                          |               |                    |                |
| (Type 1A, 50 mm/min)                             | 3.0           | %                  | ISO 527-2      |
| (Type 1A, 50 mm/min) - Conditioned               | 28            | %                  | ISO 527-2      |
| Tensile Modulus                                  |               |                    |                |
| (1 mm/min, Type 1A)                              | 3400          | MPa                | ISO 527-1      |
| (1 mm/min, Type 1A) - Conditioned                | 1100          | MPa                | ISO 527-1      |
| <b>Impact</b>                                    |               |                    |                |
| Charpy Impact Strength - Notched                 |               |                    |                |
| (23 °C, Type 1, Edgewise, Notch A)               | 8.0           | kJ/m <sup>2</sup>  | ISO 179        |
| (-30 °C, Type 1, Edgewise, Notch A)              | 6.0           | kJ/m <sup>2</sup>  | ISO 179        |
| (23 °C, Type 1, Edgewise, Notch A) - Conditioned | 13            | kJ/m <sup>2</sup>  | ISO 179        |
| Charpy Impact Strength - Unnotched               |               |                    |                |
| (23 °C, Type 1, Edgewise)                        | No Break      |                    | ISO 179        |
| (-30 °C, Type 1, Edgewise)                       | No Break      |                    | ISO 179        |
| (23 °C, Type 1, Edgewise) - Conditioned          | No Break      |                    | ISO 179        |
| (-30 °C, Type 1, Edgewise) - Conditioned         | No Break      |                    | ISO 179        |
| <b>Hardness</b>                                  |               |                    |                |
| Ball Pressure Test, (200 °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)                                                  | 220      | °C     | ISO 306              |
| Deflection Temperature Under Load Unannealed (0.45 MPa), (Flatwise) | 220      | °C     | ISO 75-2/B           |
| Deflection Temperature Under Load Unannealed (1.80 MPa), (Flatwise) | 80.0     | °C     | ISO 75-2/A           |
| RTI Elec                                                            |          |        |                      |
| (1.5 mm)                                                            | 130      | °C     | UL 746B              |
| (3.0 mm)                                                            | 130      | °C     | UL 746B              |
| (0.75 mm)                                                           | 130      | °C     | UL 746B              |
| RTI Imp                                                             |          |        |                      |
| (1.5 mm)                                                            | 85.0     | °C     | UL 746B              |
| (3.0 mm)                                                            | 85.0     | °C     | UL 746B              |
| (0.75 mm)                                                           | 80.0     | °C     | UL 746B              |
| RTI Str                                                             |          |        |                      |
| (1.5 mm)                                                            | 115      | °C     | UL 746B              |
| (3.0 mm)                                                            | 155      | °C     | UL 746B              |
| (0.75 mm)                                                           | 105      | °C     | UL 746B              |
| <b>Electrical</b>                                                   |          |        |                      |
| Volume Resistivity                                                  | >1.0E+13 | ohm*m  | IEC 62631-3-1        |
| - Conditioned                                                       | >1.0E+10 | 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            |
| - Conditioned                                                       | >1.0E+12 | ohm    | IEC 60093            |
| <b>Flammable</b>                                                    |          |        |                      |
| Hot-wire Ignition (HWI)                                             |          |        | UL 746A              |
| Burning Rate                                                        |          |        |                      |
| (0.750 mm, Self-Extinguishing)                                      | 0.0      | mm/min | ISO 3795             |
| (1.50 mm, Self-Extinguishing)                                       | 0.0      | mm/min | ISO 3795             |
| (3.00 mm, Self-Extinguishing)                                       | 0.0      | mm/min | ISO 3795             |
| Glow Wire Flammability Index                                        |          |        |                      |
| (0.75 mm)                                                           | 960      | °C     | IEC 60695-2-12       |
| (1.5 mm)                                                            | 960      | °C     | IEC 60695-2-12       |
| (3.0 mm)                                                            | 960      | °C     | IEC 60695-2-12       |
| Glow Wire Ignition Temperature                                      |          |        |                      |
| (0.75 mm)                                                           | 700      | °C     | IEC 60695-2-13       |
| (1.5 mm)                                                            | 700      | °C     | IEC 60695-2-13       |
| (3.0 mm)                                                            | 700      | °C     | IEC 60695-2-13       |
| Oxygen Index                                                        | 31       | %      | ISO 4589-2           |
| <b>UL Information</b>                                               |          |        |                      |
| Flame Rating                                                        |          |        |                      |
| (1.5 mm)                                                            | V-0      |        | UL 94                |
| (3.0 mm)                                                            | V-0      |        | UL 94                |
| (0.75 mm)                                                           | V-0      |        | UL 94                |
| Flammability Classification                                         |          |        |                      |
| (0.75 mm)                                                           | V-0      |        | IEC 60695-11-10, -20 |
| (1.5 mm)                                                            | V-0      |        | IEC 60695-11-10, -20 |
| (3.0 mm)                                                            | V-0      |        | IEC 60695-11-10, -20 |
| UL File Number                                                      | E86615   |        |                      |

| <b>Injection Parameters</b> | <b>Nominal Value</b> | <b>Units</b> |
|-----------------------------|----------------------|--------------|
| Drying Time                 | 4.0 to 6.0           | hr           |
| Drying Temperature          | 80                   | °C           |
| Suggested Max Moisture      | 0.040 to 0.10        | %            |
| Screw Speed                 | <250                 | mm/sec       |
| Processing (Melt) Temp      | 240 to 260           | °C           |
| Injection Rate              | Slow-Moderate        |              |
| Back Pressure               | 2.00 to 8.00         | MPa          |
| Mold Temperature            | 60 to 90             | °C           |