

## Technical Data Sheet

### Schulamid 612 FS4004 K2348 BLK



Polyamide 612

#### Product Description

High impact modified Polyamide 612 with highly effective long term heat stabilization system. Grade designed for extrusion applications. Matte surface quality. High chemical resistance. Applications: Fluid systems. Specially used in automotive fluid systems.

**Processing Method** Extrusion

**Attribute** Good Chemical Resistance; Good Heat Aging Resistance; Impact Modified; Low Gloss; Salt Water/Spray Resistant

| Typical Properties                               | Nominal Value | Units             | Test Method |
|--------------------------------------------------|---------------|-------------------|-------------|
| <b>Physical</b>                                  |               |                   |             |
| Density, (Method A)                              | 1.01          | g/cm <sup>3</sup> | ISO 1183    |
| <b>Mechanical</b>                                |               |                   |             |
| Tensile Stress at Yield                          |               |                   |             |
| (Type 1A, 50 mm/min)                             | 35.0          | MPa               | ISO 527-2   |
| (Type 1A, 50 mm/min) - Conditioned               | 27.0          | MPa               | ISO 527-2   |
| Nominal Tensile Strain at Break                  |               |                   |             |
| (50 mm/min, Type 1A) - Conditioned               | >250          | %                 | ISO 527-2   |
| (50 mm/min, Type 1A)                             | >250          | %                 | ISO 527-2   |
| Flexural Modulus, (2.0 mm/min)                   | 1000          | MPa               | ISO 178     |
| Tensile Strain at Yield                          |               |                   |             |
| (Type 1A, 50 mm/min)                             | 29            | %                 | ISO 527-2   |
| (Type 1A, 50 mm/min) - Conditioned               | 36            | %                 | ISO 527-2   |
| Tensile Modulus                                  |               |                   |             |
| (1 mm/min, Type 1A)                              | 1100          | MPa               | ISO 527-1   |
| (1 mm/min, Type 1A) - Conditioned                | 590           | MPa               | ISO 527-1   |
| Flexural Stress                                  |               |                   |             |
| (2.0 mm/min, 3.5%)                               | 35.0          | MPa               | ISO 178     |
| (2.0 mm/min, 7.0%)                               | 44.0          | MPa               | ISO 178     |
| <b>Impact</b>                                    |               |                   |             |
| Charpy Impact Strength - Notched                 |               |                   |             |
| (23 °C, Type 1, Edgewise, Notch A)               | 110           | kJ/m <sup>2</sup> | ISO 179     |
| (-30 °C, Type 1, Edgewise, Notch A)              | 70            | kJ/m <sup>2</sup> | ISO 179     |
| (23 °C, Type 1, Edgewise, Notch A) - Conditioned | 120           | kJ/m <sup>2</sup> | ISO 179     |
| (-40 °C, Type 1, Edgewise, Notch A)              | 95            | 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              |
| (-40 °C, Type 1, Edgewise)                                          | No Break             |              | ISO 179              |
| <b>Hardness</b>                                                     |                      |              |                      |
| Ball Indentation Hardness, (H 358/30)                               | 64.0                 | MPa          | ISO 2039-1           |
| <b>Thermal</b>                                                      |                      |              |                      |
| Vicat Softening Temperature                                         |                      |              |                      |
| (B (50N), 50 °C/h)                                                  | 110                  | °C           | ISO 306              |
| (A (10N), 50 °C/h)                                                  | 200                  | °C           | ISO 306              |
| Deflection Temperature Under Load Unannealed (0.45 MPa), (Flatwise) | 100                  | °C           | ISO 75-2/B           |
| Deflection Temperature Under Load Unannealed (1.80 MPa), (Flatwise) | 45.0                 | °C           | ISO 75-2/A           |
| <b>Electrical</b>                                                   |                      |              |                      |
| Volume Resistivity                                                  | >1.0E+13             | ohm*m        | IEC 62631-3-1        |
| - Conditioned                                                       | >1.0E+10             | ohm*m        | IEC 62631-3-1        |
| Surface Resistivity                                                 | >1.0E+15             | ohm          | IEC 60093            |
| - Conditioned                                                       | >1.0E+12             | ohm          | IEC 60093            |
| <b>Flammable</b>                                                    |                      |              |                      |
| Burning Rate                                                        |                      |              |                      |
| (2.00 mm)                                                           | 30                   | mm/min       | FMVSS 302            |
| (2.00 mm)                                                           | 30                   | mm/min       | ISO 3795             |
| Glow Wire Flammability Index                                        |                      |              |                      |
| (1.5 mm)                                                            | 725                  | °C           | IEC 60695-2-12       |
| (3.0 mm)                                                            | 725                  | °C           | IEC 60695-2-12       |
| Glow Wire Ignition Temperature                                      |                      |              |                      |
| (1.5 mm)                                                            | 700                  | °C           | IEC 60695-2-13       |
| (3.0 mm)                                                            | 700                  | °C           | IEC 60695-2-13       |
| <b>UL Information</b>                                               |                      |              |                      |
| Flammability Classification                                         |                      |              |                      |
| (1.5 mm)                                                            | HB                   |              | IEC 60695-11-10, -20 |
| (3.0 mm)                                                            | HB                   |              | IEC 60695-11-10, -20 |
| <b>Extrusion Parameters</b>                                         |                      |              |                      |
|                                                                     | <b>Nominal Value</b> | <b>Units</b> |                      |
| Drying Time                                                         | 3.0 to 4.0           | hr           |                      |
| Melt Temperature                                                    | 230 to 270           | °C           |                      |
| Suggested Max Moisture                                              | 0.1                  | %            |                      |
| Drying Temperature                                                  | 80                   | °C           |                      |