

## Technical Data Sheet

### *Polyflam* HSF 36 WHI84035



Polystyrene, General Purpose

#### Product Description

High impact flame-retardant PS grade; without PBDE

**Processing Method** Injection Molding

**Additive** Flame Retardant

| Typical Properties                                                  | Nominal Value | Units                   | Test Method    |
|---------------------------------------------------------------------|---------------|-------------------------|----------------|
| <b>Physical</b>                                                     |               |                         |                |
| Melt Volume Flow Rate, (200 °C/5.0 kg)                              | 5.0           | cm <sup>3</sup> /10 min | ISO 1133       |
| Density, (Method A)                                                 | 1.18          | g/cm <sup>3</sup>       | ISO 1183       |
| <b>Mechanical</b>                                                   |               |                         |                |
| Tensile Stress at Yield, (Type 1A, 50 mm/min)                       | 25.0          | MPa                     | ISO 527-2      |
| Tensile Strain at Yield, (Type 1A, 50 mm/min)                       | 2.0           | %                       | ISO 527-2      |
| Tensile Modulus, (1 mm/min, Type 1A)                                | 2100          | MPa                     | ISO 527-1      |
| <b>Impact</b>                                                       |               |                         |                |
| Charpy Impact Strength - Notched                                    |               |                         |                |
| (23 °C, Type 1, Edgewise, Notch A)                                  | 10            | kJ/m <sup>2</sup>       | ISO 179        |
| (-30 °C, Type 1, Edgewise, Notch A)                                 | 2.0           | kJ/m <sup>2</sup>       | ISO 179        |
| Charpy Impact Strength - Unnotched                                  |               |                         |                |
| (23 °C, Type 1, Edgewise)                                           | 80            | kJ/m <sup>2</sup>       | ISO 179        |
| (-30 °C, Type 1, Edgewise)                                          | 40            | kJ/m <sup>2</sup>       | ISO 179        |
| <b>Hardness</b>                                                     |               |                         |                |
| Ball Pressure Test, (80 °C)                                         | Pass          |                         | IEC 60695-10-2 |
| <b>Thermal</b>                                                      |               |                         |                |
| Vicat Softening Temperature                                         |               |                         |                |
| (B (50N), 50 °C/h)                                                  | 86.0          | °C                      | ISO 306        |
| (A (10N), 50 °C/h)                                                  | 100           | °C                      | ISO 306        |
| Deflection Temperature Under Load Unannealed (0.45 MPa), (Flatwise) | 86.0          | °C                      | ISO 75-2/B     |
| Deflection Temperature Under Load Unannealed (1.80 MPa), (Flatwise) | 75.0          | °C                      | ISO 75-2/A     |
| RTI Elec                                                            |               |                         |                |
| (1.5 mm)                                                            | 50.0          | °C                      | UL 746B        |
| (3.0 mm)                                                            | 50.0          | °C                      | UL 746B        |
| RTI Imp                                                             |               |                         |                |
| (1.5 mm)                                                            | 50.0          | °C                      | UL 746B        |
| (3.0 mm)                                                            | 50.0          | °C                      | UL 746B        |

|                                  |          |        |                      |
|----------------------------------|----------|--------|----------------------|
| RTI Str                          |          |        |                      |
| (1.5 mm)                         | 50.0     | °C     | UL 746B              |
| (3.0 mm)                         | 50.0     | °C     | UL 746B              |
| <b>Electrical</b>                |          |        |                      |
| Volume Resistivity               | >1.0E+13 | ohm*m  | IEC 62631-3-1        |
| Comparative Tracking Index (CTI) | 350      | V      | IEC 60112            |
| Surface Resistivity              | >1.0E+15 | ohm    | IEC 60093            |
| <b>Flammable</b>                 |          |        |                      |
| Burning Rate                     |          |        |                      |
| (2.00 mm, Self-Extinguishing)    | 0.0      | mm/min | ISO 3795             |
| (2.00 mm, Self-Extinguishing)    | 0.0      | mm/min | FMVSS 302            |
| Glow Wire Flammability Index     |          |        |                      |
| (1.5 mm)                         | 960      | °C     | IEC 60695-2-12       |
| (3.0 mm)                         | 960      | °C     | IEC 60695-2-12       |
| Glow Wire Ignition Temperature   |          |        |                      |
| (1.5 mm)                         | 650      | °C     | IEC 60695-2-13       |
| (3.0 mm)                         | 625      | °C     | IEC 60695-2-13       |
| Oxygen Index                     | 26       | %      | ISO 4589-2           |
| <b>UL Information</b>            |          |        |                      |
| Flame Rating                     |          |        |                      |
| (1.5 mm)                         | V-0      |        | UL 94                |
| (3.0 mm)                         | V-0      |        | UL 94                |
| (3.9 mm)                         | V-0      |        | UL 94                |
| Flammability Classification      |          |        |                      |
| (1.5 mm)                         | V-0      |        | IEC 60695-11-10, -20 |
| (2.0 mm)                         | 5VB      |        | IEC 60695-11-10, -20 |
| (3.0 mm)                         | 5VA      |        | IEC 60695-11-10, -20 |
| (3.0 mm)                         | V-0      |        | IEC 60695-11-10, -20 |
| (3.9 mm)                         | 5VA      |        | IEC 60695-11-10, -20 |
| (3.9 mm)                         | V-0      |        | IEC 60695-11-10, -20 |
| UL File Number                   | E86615   |        |                      |

| Injection Parameters   | Value         | Units  |
|------------------------|---------------|--------|
| Drying Time            | 2.0 to 4.0    | hr     |
| Drying Temperature     | 70 to 80      | °C     |
| Screw Speed            | <300          | mm/sec |
| Processing (Melt) Temp | 190 to 220    | °C     |
| Injection Rate         | Slow-Moderate |        |
| Back Pressure          | 5.00 to 10.0  | MPa    |
| Mold Temperature       | 30 to 60      | °C     |