

## Solvay Specialty Polymers AvaSpire® AV-722 Polyaryletherketone (PAEK) (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Polyketone

### Material Notes:

AvaSpire AV-722 is an unreinforced polyaryletherketone (PAEK) that offers improved economics relative to PEEK while retaining most of PEEK's key performance attributes. AV-722 resin has been formulated for applications requiring high chemical resistance and mechanical strength along with low moisture absorption and good barrier properties. These and other properties make this resin well-suited for applications in healthcare, transportation, electronics, chemical processing and other industries. - Beige: AvaSpire AV-722 BG 20Injection  
Notes: Back Pressure: MinimumInformation provided by Solvay Specialty Polymers.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Solvay-Specialty-Polymers-AvaSpire-AV-722-Polyaryletherketone-PAEK-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-AvaSpire-AV-722-Polyaryletherketone-PAEK-nbspUnverified-Data.php)

| Physical Properties               | Metric                                                   | English                                                  | Comments                      |
|-----------------------------------|----------------------------------------------------------|----------------------------------------------------------|-------------------------------|
| Specific Gravity                  | 1.32 g/cc                                                | 1.32 g/cc                                                | ASTM D792                     |
| Water Absorption                  | 0.10 %<br>@Time 86400 sec                                | 0.10 %<br>@Time 24.0 hour                                | ASTM D570                     |
| Viscosity                         | 450000 cP<br>@Shear Rate 1000 1/s,<br>Temperature 400 °C | 450000 cP<br>@Shear Rate 1000 1/s,<br>Temperature 752 °F | Melt                          |
| Linear Mold Shrinkage, Flow       | 0.0080 - 0.010 cm/cm<br>@Thickness 3.18 mm               | 0.0080 - 0.010 in/in<br>@Thickness 0.125 in              | 5" x 0.5" x 0.125"; ASTM D955 |
| Linear Mold Shrinkage, Transverse | 0.012 - 0.014 cm/cm<br>@Thickness 3.18 mm                | 0.012 - 0.014 in/in<br>@Thickness 0.125 in               | 5" x 0.5" x 0.125"; ASTM D955 |
| Melt Flow                         | 1.0 g/10 min<br>@Load 2.16 kg,<br>Temperature 400 °C     | 1.0 g/10 min<br>@Load 4.76 lb,<br>Temperature 752 °F     | ASTM D1238                    |

| Mechanical Properties   | Metric   | English   | Comments             |
|-------------------------|----------|-----------|----------------------|
| Hardness, Rockwell M    | 95       | 95        | M-Scale; ASTM D785   |
| Tensile Strength        | 89.0 MPa | 12900 psi | 50 mm/min; ASTM D638 |
| Tensile Strength, Yield | 91.0 MPa | 13200 psi | ISO 527-2/1A/50      |
| Elongation at Break     | 25 %     | 25 %      | 50 mm/min; ASTM D638 |
|                         | 25 %     | 25 %      | ISO 527-2/1A/50      |
| Elongation at Yield     | 4.5 %    | 4.5 %     | ISO 527-2/1A/50      |

| Mechanical Properties        | Metric          | English        | Comments             |
|------------------------------|-----------------|----------------|----------------------|
| Tensile Modulus              | 3.70 GPa        | 537 ksi        | 50 mm/min; ASTM D638 |
|                              | 3.90 GPa        | 566 ksi        | ISO 527-2/1A/1       |
| Flexural Strength            | 138 MPa         | 20000 psi      | ISO 178              |
|                              | 141 MPa         | 20500 psi      | ASTM D790            |
| Flexural Modulus             | 3.70 GPa        | 537 ksi        | ASTM D790            |
|                              | 3.80 GPa        | 551 ksi        | ISO 178              |
| Compressive Strength         | 112 MPa         | 16200 psi      | ASTM D695            |
| Poissons Ratio               | 0.43            | 0.43           | ASTM E132            |
| Shear Modulus                | 1.29 - 1.36 GPa | 187 - 197 ksi  | Calculated           |
| Shear Strength               | 79.0 MPa        | 11500 psi      | ASTM D732            |
| Izod Impact, Notched         | 0.800 J/cm      | 1.50 ft-lb/in  | ASTM D256            |
|                              | NB              | NB             | ASTM D4812           |
| Izod Impact, Notched (ISO)   | 7.00 kJ/m²      | 3.33 ft-lb/in² | ISO 180              |
| Izod Impact, Unnotched (ISO) | NB              | NB             | ISO 180              |

| Thermal Properties                          | Metric                       | English                     | Comments                              |
|---------------------------------------------|------------------------------|-----------------------------|---------------------------------------|
| CTE, linear, Parallel to Flow               | 45.0 µm/m-°C                 | 25.0 µin/in-°F              | TMA; ASTM E831                        |
|                                             | @Temperature -50.0 - 50.0 °C | @Temperature -58.0 - 122 °F |                                       |
| Specific Heat Capacity                      | 1.41 J/g-°C                  | 0.337 BTU/lb-°F             | DSC                                   |
|                                             | @Temperature 50.0 °C         | @Temperature 122 °F         |                                       |
|                                             | 1.97 J/g-°C                  | 0.471 BTU/lb-°F             | DSC                                   |
|                                             | @Temperature 200 °C          | @Temperature 392 °F         |                                       |
| Thermal Conductivity                        | 0.220 W/m-K                  | 1.53 BTU-in/hr-ft²-°F       | ASTM E1530                            |
| Melting Point                               | 340 °C                       | 644 °F                      | Peak (major component); ASTM D3418    |
| Deflection Temperature at 1.8 MPa (264 psi) | 161 °C                       | 322 °F                      | Annealed; 2 hours at 200°C; ASTM D648 |
|                                             | @Thickness 3.20 mm           | @Thickness 0.126 in         |                                       |
| Glass Transition Temp, Tg                   | 150 °C                       | 302 °F                      | ASTM D3418                            |

|                                    |                |                 |                        |
|------------------------------------|----------------|-----------------|------------------------|
| Oxygen Index<br>Thermal Properties | 40 %<br>Metric | 40 %<br>English | ASTM D2863<br>Comments |
|------------------------------------|----------------|-----------------|------------------------|

| Electrical Properties | Metric                | English               | Comments                  |
|-----------------------|-----------------------|-----------------------|---------------------------|
| Volume Resistivity    | 3.10e+17 ohm-cm       | 3.10e+17 ohm-cm       | ASTM D257                 |
| Surface Resistance    | >= 1.90e+17 ohm       | >= 1.90e+17 ohm       | ASTM D257                 |
| Dielectric Constant   | 3.06                  | 3.06                  | ASTM D150                 |
|                       | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                           |
|                       | 3.12                  | 3.12                  | ASTM D150                 |
|                       | @Frequency 60.0 Hz    | @Frequency 60.0 Hz    |                           |
| Dielectric Strength   | 19.0 kV/mm            | 483 kV/in             | ASTM D149                 |
|                       | @Thickness 3.00 mm    | @Thickness 0.118 in   |                           |
|                       | 170 kV/mm             | 4320 kV/in            | Amorphous Film; ASTM D149 |
|                       | @Thickness 0.0500 mm  | @Thickness 0.00197 in |                           |
| Dissipation Factor    | 0.0010                | 0.0010                | ASTM D150                 |
|                       | @Frequency 60.0 Hz    | @Frequency 60.0 Hz    |                           |
|                       | 0.0040                | 0.0040                | ASTM D150                 |
|                       | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                           |

| Processing Properties     | Metric       | English      | Comments |
|---------------------------|--------------|--------------|----------|
| Rear Barrel Temperature   | 354 °C       | 669 °F       |          |
| Middle Barrel Temperature | 366 °C       | 691 °F       |          |
| Front Barrel Temperature  | 371 °C       | 700 °F       |          |
| Nozzle Temperature        | 374 °C       | 705 °F       |          |
| Mold Temperature          | 177 - 204 °C | 351 - 399 °F |          |
| Drying Temperature        | 149 °C       | 300 °F       |          |
| Dry Time                  | 4.00 hour    | 4.00 hour    |          |

| Descriptive Properties | Value                | Comments |
|------------------------|----------------------|----------|
| Appearance             | Beige                |          |
| Availability           | Africa & Middle East |          |

| Descriptive Properties  | Value                              | Comments |
|-------------------------|------------------------------------|----------|
|                         | Europe                             |          |
|                         | North America                      |          |
|                         | South America                      |          |
| Features                | Ductile                            |          |
|                         | Flame Retardant                    |          |
|                         | Good Chemical Resistance           |          |
|                         | Good Dimensional Stability         |          |
|                         | Good Impact Resistance             |          |
|                         | High Heat Resistance               |          |
| Forms                   | Pellets                            |          |
| Generic                 | PAEK                               |          |
| Injection Rate          | Fast                               |          |
| Processing Method       | Extrusion Blow Molding             |          |
|                         | Fiber (Spinning) Extrusion         |          |
|                         | Film Extrusion                     |          |
|                         | Injection Blow Molding             |          |
|                         | Injection Molding                  |          |
|                         | Machining                          |          |
|                         | Profile Extrusion                  |          |
|                         | Thermoforming                      |          |
| Screw Compression Ratio | Wire & Cable Extrusion             |          |
|                         | 2.5:1.0 to 3.5:1.0                 |          |
| Uses                    | Aircraft Applications              |          |
|                         | Automotive Applications            |          |
|                         | Electrical/Electronic Applications |          |
|                         | Film                               |          |
|                         | Fuel Lines                         |          |

| Descriptive Properties | Value<br>Usars                  | Comments |
|------------------------|---------------------------------|----------|
|                        | Medical/Healthcare Applications |          |
|                        | Oil/Gas Applications            |          |
|                        | Seals                           |          |

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