

## GEHR Plastics PVDF Polyvinylidene Fluoride

Category : Polymer , Thermoplastic , Fluoropolymer , PVDF

### Material Notes:

Polyvinylidene fluoride shows a higher tensile strength, pressure resistance and dimensional stability than the related PTFE, but friction and insulation properties are lower. PVDF has a high mechanical strength and toughness at lower temperature and it's self-extinguishing. The temperature ranges from -30°C to 150°C. Properties high tensile strength high mechanical strength high rigidity high chemical resistance very low water absorption good friction and wear and tear values self-extinguishing high UV-resistance toxic fumes when burned can not be solvent cemented relatively high coefficient of thermal expansion Applications include gaskets, pumps, rotation disks, valves, flap traps, centrifugals of extraction, fittings, glide tracks, and cogwheels.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_GEHR-Plastics-PVDF-Polyvinylidene-Fluoride.php](http://www.lookpolymers.com/polymer_GEHR-Plastics-PVDF-Polyvinylidene-Fluoride.php)

| Physical Properties | Metric     | English    | Comments |
|---------------------|------------|------------|----------|
| Specific Gravity    | 1.78 g/cc  | 1.78 g/cc  | ISO 1183 |
| Water Absorption    | <= 0.040 % | <= 0.040 % | ISO 62   |

| Mechanical Properties     | Metric                 | English                    | Comments      |
|---------------------------|------------------------|----------------------------|---------------|
| Hardness, Shore D         | 78                     | 78                         | DIN 53505     |
| Ball Indentation Hardness | 80.0 MPa               | 11600 psi                  | ISO 2039      |
| Tensile Strength at Break | 46.0 MPa               | 6670 psi                   | ISO 527       |
| Tensile Strength, Yield   | 50.0 MPa               | 7250 psi                   | ISO 527       |
| Elongation at Break       | >= 50 %                | >= 50 %                    | ISO 527       |
| Elongation at Yield       | 9.0 %                  | 9.0 %                      | ISO 527       |
| Modulus of Elasticity     | 2.00 GPa               | 290 ksi                    | ISO 527       |
| Flexural Strength         | 80.0 MPa               | 11600 psi                  | 3.5%; ISO 178 |
| Charpy Impact Unnotched   | 25.2 J/cm <sup>2</sup> | 120 ft-lb/in <sup>2</sup>  | ISO 179       |
| Charpy Impact, Notched    | 2.20 J/cm <sup>2</sup> | 10.5 ft-lb/in <sup>2</sup> | ISO 179       |
| Coefficient of Friction   | 0.34                   | 0.34                       | DIN 53375     |

| Thermal Properties | Metric                                    | English                                   | Comments  |
|--------------------|-------------------------------------------|-------------------------------------------|-----------|
| CTE, linear        | 120 Âµm/m-Â°C<br>@Temperature 20.0<br>Â°C | 66.7 Âµin/in-Â°F<br>@Temperature 68.0 Â°F | DIN 53752 |

| Thermal Properties                          | Metric    | English   | Comments          |
|---------------------------------------------|-----------|-----------|-------------------|
| Maximum Service Temperature, Air            | 150 Â°C   | 302 Â°F   |                   |
| Deflection Temperature at 0.46 MPa (66 psi) | 145 Â°C   | 293 Â°F   | ISO 75            |
| Deflection Temperature at 1.8 MPa (264 psi) | 104 Â°C   | 219 Â°F   | ISO 75            |
| Vicat Softening Point                       | 140 Â°C   | 284 Â°F   | VST/B/50; ISO 306 |
|                                             | 160 Â°C   | 320 Â°F   | VST/A/50; ISO 306 |
| Minimum Service Temperature, Air            | -30.0 Â°C | -22.0 Â°F |                   |
| Flammability, UL94                          | V-0       | V-0       |                   |

| Electrical Properties          | Metric                | English               | Comments       |
|--------------------------------|-----------------------|-----------------------|----------------|
| Volume Resistivity             | >= 1.00e+13 ohm-cm    | >= 1.00e+13 ohm-cm    | VDE 0303       |
| Surface Resistivity per Square | >= 1.00e+14 ohm       | >= 1.00e+14 ohm       | VDE 0303       |
| Dielectric Constant            | 7.25                  | 7.25                  | DIN 53483      |
|                                | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                |
| Dielectric Strength            | 22.0 kV/mm            | 559 kV/in             | VDE 0303       |
| Dielectric Loss Index          | 0.18                  | 0.18                  | DIN 53483      |
|                                | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz |                |
| Comparative Tracking Index     | 300 V                 | 300 V                 | CTI; IEC 60112 |

| Descriptive Properties    | Value   | Comments |
|---------------------------|---------|----------|
| Acid Resistance           | limited |          |
| Aromatic Resistance       | yes     |          |
| Bondability               | limited |          |
| CKW Resistance            | yes     |          |
| Color                     | Natural |          |
| Hydrocarbonate Resistance | yes     |          |
| Hydroxide Resistance      | yes     |          |
| Ketone Resistance         | yes     |          |

| Descriptive Properties        | Value | Comments |
|-------------------------------|-------|----------|
| Physical Properties according | 10    |          |
| Resistance Against Hot Water  | yes   |          |
| UV Stabilization              | yes   |          |

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