

**Stanyl® ForTii™ F11**

PA4T-GF30 FR(40)

DSM Engineering Plastics

**Product Texts**

30% Glass Reinforced, Flame Retardant, Halogen free and free of red phosphorous

ISO 1043 PA4T-GF30 FR(40)

[Stanyl ForTii website](#)

| <b>Rheological properties</b> | <b>dry / cond</b> | <b>Unit</b> | <b>Test Standard</b> |
|-------------------------------|-------------------|-------------|----------------------|
|-------------------------------|-------------------|-------------|----------------------|

|                             |         |   |                 |
|-----------------------------|---------|---|-----------------|
| <b>ISO Data</b>             |         |   |                 |
| Molding shrinkage, parallel | 0.3 / * | % | ISO 294-4, 2577 |
| Molding shrinkage, normal   | 1.2 / * | % | ISO 294-4, 2577 |

| <b>Mechanical properties</b> | <b>dry / cond</b> | <b>Unit</b> | <b>Test Standard</b> |
|------------------------------|-------------------|-------------|----------------------|
|------------------------------|-------------------|-------------|----------------------|

|  |               |                   |              |
|--|---------------|-------------------|--------------|
| <b>ISO Data</b>                        |               |                   |              |
| Tensile Modulus                        | 12000 / 12000 | MPa               | ISO 527-1/-2 |
| Stress at break                        | 155 / 155     | MPa               | ISO 527-1/-2 |
| Strain at break                        | 2 / 2         | %                 | ISO 527-1/-2 |
| Charpy impact strength (+23°C)         | 50 / 50       | kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy notched impact strength (+23°C) | 10 / 10       | kJ/m <sup>2</sup> | ISO 179/1eA  |

| <b>Thermal properties</b> | <b>dry / cond</b> | <b>Unit</b> | <b>Test Standard</b> |
|---------------------------|-------------------|-------------|----------------------|
|---------------------------|-------------------|-------------|----------------------|

|   |         |       |                 |
|---|---------|-------|-----------------|
| <b>ISO Data</b>                             |         |       |                 |
| Melting temperature (10°C/min)              | 325 / * | °C    | ISO 11357-1/-3  |
| Glass transition temperature, 10°C/min      | 125 / * | °C    | ISO 11357-1/-2  |
| Temp. of deflection under load (1.80 MPa)   | 305 / * | °C    | ISO 75-1/-2     |
| Temp. of deflection under load (0.45 MPa)   | 323 / * | °C    | ISO 75-1/-2     |
| Coeff. of linear therm. expansion, parallel | 15 / *  | E-6/K | ISO 11359-1/-2  |
| Coeff. of linear therm. expansion, normal   | 70 / *  | E-6/K | ISO 11359-1/-2  |
| Burning behav. at 1.5 mm nom. thickn.       | V-0 / * | class | IEC 60695-11-10 |
| UL recognition                              | UL / *  | -     | -               |
| Burning behav. at thickness h               | V-0 / * | class | IEC 60695-11-10 |
| Thickness tested                            | 0.2 / * | mm    | IEC 60695-11-10 |
| UL recognition                              | UL / *  | -     | -               |
| Oxygen index                                | 39 / *  | %     | ISO 4589-1/-2   |

| <b>Electrical properties</b> | <b>dry / cond</b> | <b>Unit</b> | <b>Test Standard</b> |
|------------------------------|-------------------|-------------|----------------------|
|------------------------------|-------------------|-------------|----------------------|

|                              |               |       |             |
|------------------------------|---------------|-------|-------------|
| <b>ISO Data</b>              |               |       |             |
| Relative permittivity, 100Hz | 4.2 / 4.2     | -     | IEC 60250   |
| Relative permittivity, 1MHz  | 3.9 / 3.9     | -     | IEC 60250   |
| Dissipation factor, 100Hz    | 64 / 64       | E-4   | IEC 60250   |
| Dissipation factor, 1MHz     | 176 / 176     | E-4   | IEC 60250   |
| Volume resistivity           | >1E13 / >1E13 | Ohm*m | IEC 60093   |
| Surface resistivity          | * / >1E15     | Ohm   | IEC 60093   |
| Electric strength            | 33 / 33       | kV/mm | IEC 60243-1 |
| Comparative tracking index   | 600 / -       | -     | IEC 60112   |

| <b>Other properties</b> | <b>dry / cond</b> | <b>Unit</b> | <b>Test Standard</b> |
|-------------------------|-------------------|-------------|----------------------|
|-------------------------|-------------------|-------------|----------------------|

|                     |          |                   |                |
|---------------------|----------|-------------------|----------------|
| <b>ISO Data</b>     |          |                   |                |
| Water absorption    | 4.6 / *  | %                 | Sim. to ISO 62 |
| Humidity absorption | 1.6 / *  | %                 | Sim. to ISO 62 |
| Density             | 1460 / - | kg/m <sup>3</sup> | ISO 1183       |

| <b>Material specific properties</b> | <b>dry / cond</b> | <b>Unit</b> | <b>Test Standard</b> |
|-------------------------------------|-------------------|-------------|----------------------|
|-------------------------------------|-------------------|-------------|----------------------|

|                 |  |  |  |
|-----------------|--|--|--|
| <b>ISO Data</b> |  |  |  |
|-----------------|--|--|--|

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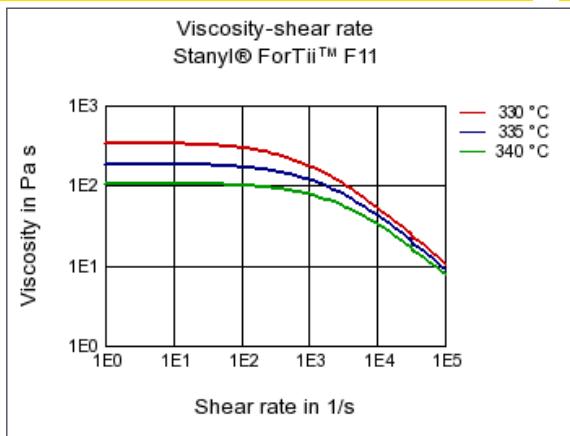
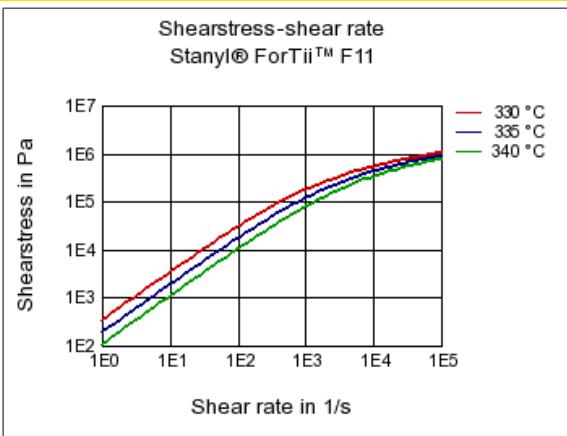
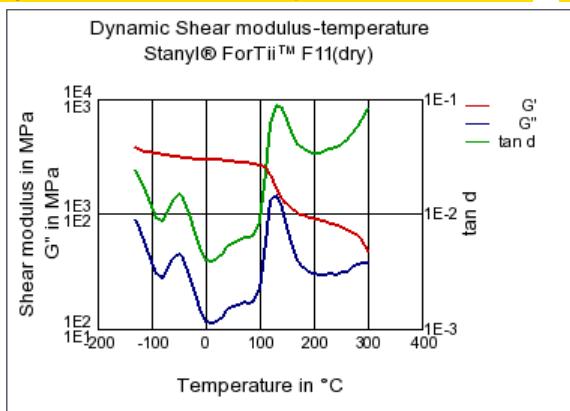
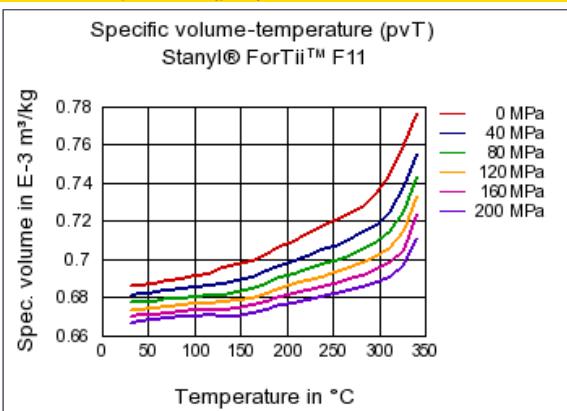
DSM Engineering Plastics

Viscosity number

86 / \*

cm³/g

ISO 307, 1157, 1628

**Diagrams****Viscosity-shear rate****Shearstress-shear rate****Dynamic Shear modulus-temperature****Specific volume-temperature (pvT)****Characteristics****Processing**

Injection Molding

**Special Characteristics**

Flame retardant

**Delivery form**

Granules