

# Stanyl® TW200F6

Polyamide 46  
DSM Engineering Plastics

Message:

Stanyl® TW200F6 is a Polyamide 46 (Nylon 46) material filled with 30% glass fiber. It is available in Europe or North America for injection molding. Important attributes of Stanyl® TW200F6 are:  
Flame Rated  
Heat Stabilizer  
Typical application of Stanyl® TW200F6: Automotive

| General Information    |                                             |               |               |
|------------------------|---------------------------------------------|---------------|---------------|
| UL YellowCard          | E43392-235041                               | E43392-235042 | E47960-240073 |
|                        | E172082-225891                              |               |               |
| Filler / Reinforcement | Glass Fiber,30% Filler by Weight            |               |               |
| Additive               | Heat Stabilizer                             |               |               |
| Features               | Heat Stabilized                             |               |               |
| Forms                  | Pellets                                     |               |               |
| Processing Method      | Injection Molding                           |               |               |
| Multi-Point Data       | Isochronous Stress vs. Strain (ISO 11403-1) |               |               |
|                        | Isothermal Stress vs. Strain (ISO 11403-1)  |               |               |
|                        | Secant Modulus vs. Strain (ISO 11403-1)     |               |               |
|                        | Shear Modulus vs. Temperature (ISO 11403-1) |               |               |
|                        | Viscosity vs. Shear Rate (ISO 11403-2)      |               |               |

| Physical                                        | Dry   | Conditioned | Unit              | Test Method |
|-------------------------------------------------|-------|-------------|-------------------|-------------|
| Density                                         | 1.41  | --          | g/cm <sup>3</sup> | ISO 1183    |
| Molding Shrinkage                               |       |             |                   | ISO 294-4   |
| Across Flow                                     | 1.3   | --          | %                 |             |
| Flow                                            | 0.50  | --          | %                 |             |
| Water Absorption<br>(Equilibrium, 23°C, 50% RH) | 2.6   | --          | %                 | ISO 62      |
| Mechanical                                      | Dry   | Conditioned | Unit              | Test Method |
| Tensile Modulus                                 |       |             |                   | ISO 527-2   |
| --                                              | 10000 | 6000        | MPa               |             |
| 120°C                                           | 5500  | --          | MPa               |             |
| 160°C                                           | 5000  | --          | MPa               |             |
| 180°C                                           | 4400  | --          | MPa               |             |
| 200°C                                           | 4000  | --          | MPa               |             |
| Tensile Stress                                  |       |             |                   | ISO 527-2   |
| Break                                           | 210   | 115         | MPa               |             |
| Break, 120°C                                    | 110   | --          | MPa               |             |
| Break, 160°C                                    | 100   | --          | MPa               |             |

|                                                   |         |             |                   |                      |
|---------------------------------------------------|---------|-------------|-------------------|----------------------|
| Break, 180°C                                      | 95.0    | --          | MPa               |                      |
| Break, 200°C                                      | 90.0    | --          | MPa               |                      |
| Tensile Strain                                    |         |             |                   | ISO 527-2            |
| Break                                             | 4.0     | 7.0         | %                 |                      |
| Break, 120°C                                      | 7.5     | --          | %                 |                      |
| Break, 160°C                                      | 7.5     | --          | %                 |                      |
| Break, 180°C                                      | 7.5     | --          | %                 |                      |
| Break, 200°C                                      | 7.5     | --          | %                 |                      |
| Flexural Modulus                                  |         |             |                   | ISO 178              |
| --                                                | 9000    | 5500        | MPa               |                      |
| 120°C                                             | 5500    | --          | MPa               |                      |
| 160°C                                             | 5000    | --          | MPa               |                      |
| Impact                                            | Dry     | Conditioned | Unit              | Test Method          |
| Charpy Notched Impact Strength                    |         |             |                   | ISO 179/1eA          |
| -30°C                                             | 11      | 11          | kJ/m <sup>2</sup> |                      |
| 23°C                                              | 12      | 21          | kJ/m <sup>2</sup> |                      |
| Charpy Unnotched Impact Strength                  |         |             |                   | ISO 179/1eU          |
| -30°C                                             | 65      | 75          | kJ/m <sup>2</sup> |                      |
| 23°C                                              | 80      | 100         | kJ/m <sup>2</sup> |                      |
| Notched Izod Impact Strength                      |         |             |                   | ISO 180/1A           |
| -40°C                                             | 11      | 11          | kJ/m <sup>2</sup> |                      |
| 23°C                                              | 12      | 21          | kJ/m <sup>2</sup> |                      |
| Thermal                                           | Dry     | Conditioned | Unit              | Test Method          |
| Heat Deflection Temperature (1.8 MPa, Unannealed) |         |             |                   | ISO 75-2/A           |
|                                                   | 290     | --          | °C                |                      |
| Melting Temperature <sup>1</sup>                  | 295     | --          | °C                | ISO 11357-3          |
| CLTE                                              |         |             |                   | ISO 11359-2          |
| Flow                                              | 2.5E-5  | --          | cm/cm/°C          |                      |
| Transverse                                        | 6.0E-5  | --          | cm/cm/°C          |                      |
| Thermal Index <sup>2</sup>                        | 177     | --          | °C                | IEC 60216            |
| Electrical                                        | Dry     | Conditioned | Unit              | Test Method          |
| Volume Resistivity                                | 1.0E+14 | 1.0E+9      | ohms·cm           | IEC 60093            |
| Electric Strength                                 | 30      | 20          | kV/mm             | IEC 60243-1          |
| Comparative Tracking Index                        | 300     | --          | V                 | IEC 60112            |
| Flammability                                      | Dry     | Conditioned | Unit              | Test Method          |
| Flammability Classification                       |         |             |                   | IEC 60695-11-10, -20 |
| 0.750 mm                                          | HB      | --          |                   |                      |
| 1.50 mm                                           | HB      | --          |                   |                      |
| Injection                                         | Dry     | Unit        |                   |                      |

|                         |               |     |
|-------------------------|---------------|-----|
| Drying Temperature      | 80.0          | °C  |
| Drying Time             | 4.0 to 8.0    | hr  |
| Rear Temperature        | 280 to 320    | °C  |
| Middle Temperature      | 300 to 320    | °C  |
| Front Temperature       | 300 to 320    | °C  |
| Nozzle Temperature      | 300 to 320    | °C  |
| Processing (Melt) Temp  | 305 to 320    | °C  |
| Mold Temperature        | 80.0 to 120   | °C  |
| Injection Rate          | Moderate-Fast |     |
| Back Pressure           | 2.00 to 10.0  | MPa |
| Screw Compression Ratio | 2.5:1.0       |     |

#### NOTE

1. 10°C/min
2. 5000 hr

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