

Stanyl® TE300

DSM Engineering Plastics - Polyamide 46

Units ▼**Action**[Legend \(Open\)](#)**General Information****Product Description**

Heat Stabilized

Special Features:

- Heat stabilized or stable to heat

Stanyl® is our high-performance polyamide 46 used for applications in automotive, E&E, gears and outdoor power equipments. Stanyl is a high performance polyamide that provides unmatched performance and value for demanding applications in which superior heat resistance, design stiffness, wear & friction and process flow qualities are required.

Because Stanyl retains its mechanical properties at high temperatures up to 220°C, this makes it ideal for extremely high-performance applications, where it outperforms PPA, PA6T, PA9T, and often PPS and LCP.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Additive	• Heat Stabilizer		
Features	• Heat Stabilized		
Processing Method	• Injection Molding		
Resin ID (ISO 1043)	• PA46		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.18	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	2.0	--	%	
Flow	2.0	--	%	
Water Absorption (Saturation, 23°C)	14	--	%	ISO 62
Water Absorption (Equilibrium, 23°C, 50% RH)	3.7	--	%	ISO 62
Viscosity Number	175	--	cm ³ /g	ISO 307
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
--	3300	1000	MPa	
120°C	800	--	MPa	
160°C	650	--	MPa	
180°C	600	--	MPa	
200°C	500	--	MPa	
Tensile Stress				ISO 527-2
Yield	100	55.0	MPa	
Yield, 120°C	50.0	--	MPa	
Yield, 160°C	40.0	--	MPa	
Yield, 180°C	35.0	--	MPa	
Yield, 200°C	30.0	--	MPa	
Tensile Strain (Yield)	10	20	%	ISO 527-2
Nominal Tensile Strain at Break				ISO 527-2
--	40	> 50	%	
180°C	> 50	--	%	
200°C	> 50	--	%	
Flexural Modulus				ISO 178
--	3000	900	MPa	
120°C	800	--	MPa	
160°C	600	--	MPa	
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	4.0	4.0	kJ/m ²	

23°C	10	35	kJ/m ²	
Charpy Unnotched Impact Strength				
-30°C	No Break	No Break	ISO 179/1eU	
23°C	No Break	No Break		
Notched Izod Impact Strength				
-40°C	4.0	4.0	kJ/m ²	
23°C	10	35	kJ/m ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature (0.45 MPa, Unannealed)	280	--	°C	ISO 75-2/B
Heat Deflection Temperature (1.8 MPa, Unannealed)	190	--	°C	ISO 75-2/A
Glass Transition Temperature ²	75.0	--	°C	ISO 11357-2
Vicat Softening Temperature	290	--	°C	ISO 306/B50
Melting Temperature ²	295	--	°C	ISO 11357-3
CLTE - Flow	8.5E-5	--	cm/cm/°C	ISO 11359-2
CLTE - Transverse	1.1E-4	--	cm/cm/°C	ISO 11359-2
RTI Elec (0.9 mm)	130	--	°C	UL 746
Thermal Index - 5000 hr	128	--	°C	IEC 60216
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Electric Strength	25	20	kV/mm	IEC 60243-1
Relative Permittivity				IEC 60250
100 Hz	4.00	13.0		
1 MHz	3.60	4.30		
Dissipation Factor				IEC 60250
100 Hz	7.0E-3	0.14		
1 MHz	0.026	0.10		
Comparative Tracking Index	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flammability Classification				IEC 60695-11-10, -20
0.75 mm	V-2	--		
1.5 mm	V-2	--		
Oxygen Index	27	--	%	ISO 4589-2

Processing Information

Injection	Dry Unit
Drying Temperature	80 °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	310 to 320 °C
Mold Temperature	80 to 120 °C
Injection Rate	Moderate-Fast
Back Pressure	2.00 to 10.0 MPa
Screw Compression Ratio	2.5:1.0

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min

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