

ForTii® U12S

PPA-I

Unreinforced, PA4T, Impact Modified

ForTii® Ace U12S is E-friendly HB and has excellent ductility and toughness and is suitable for over-molding due to its high melting temperature. Up to 120°C dry as molded or up to 60°C conditioned this grade has good stiffness retention. U12S is suitable for longer term use up to 130°C.

Properties	Typical Data	Unit	Test Method
Rheological properties	dry / cond		
Molding shrinkage (parallel)	1.1 / *	%	ISO 294-4
Molding shrinkage (normal)	1.9 / *	%	ISO 294-4
Mechanical properties	dry / cond		
Tensile modulus	2800 / 2900	MPa	ISO 527-1/-2
Tensile modulus (100°C)	1700 / -	MPa	ISO 527-1/-2
Tensile modulus (120°C)	800 / -	MPa	ISO 527-1/-2
Tensile modulus (140°C)	500	MPa	ISO 527-1/-2
Tensile modulus (160°C)	410	MPa	ISO 527-1/-2
Tensile modulus (180°C)	400	MPa	ISO 527-1/-2
Yield stress	75 / 60	MPa	ISO 527-1/-2
Yield stress (120°C)	31	MPa	ISO 527-1/-2
Yield stress (160°C)	21	MPa	ISO 527-1/-2
Yield stress (180°C)	20	MPa	ISO 527-1/-2
Stress at break	75 / 60	MPa	ISO 527-1/-2
Stress at break (100°C)	40 / -	MPa	ISO 527-1/-2
Stress at break (120°C)	30 / -	MPa	ISO 527-1/-2
Stress at break (140°C)	25	MPa	ISO 527-1/-2
Stress at break (160°C)	20	MPa	ISO 527-1/-2



ForTii[®] U12S

Properties	Typical Data	Unit	Test Method
Stress at break (180°C)	18	MPa	ISO 527-1/-2
Strain at break	13 / 20	%	ISO 527-1/-2
Strain at break (100°C)	19 / -	%	ISO 527-1/-2
Strain at break (120°C)	50 / -	%	ISO 527-1/-2
Strain at break (140°C)	100	%	ISO 527-1/-2
Strain at break (160°C)	100	%	ISO 527-1/-2
Strain at break (180°C)	90	%	ISO 527-1/-2
Flexural modulus	2500 / -	MPa	ISO 178
Flexural strength	110 / -	MPa	ISO 178
Charpy impact strength (+23°C)	175 / 185	kJ/m ²	ISO 179/1eU
Charpy impact strength (-30°C)	135 / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength (+23°C)	12 / 15	kJ/m ²	ISO 179/1eA
Charpy notched impact strength (-30°C)	9 / -	kJ/m ²	ISO 179/1eA

Thermal properties

dry / cond

Melting temperature (10°C/min)	325 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	110 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.5 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.78 / *	E-4/°C	ISO 11359-1/-2

Electrical properties

dry / cond

Volume resistivity	>1E13 / >1E13	Ohm*m	IEC 62631-3-1
Electric strength	35 / 33	kV/mm	IEC 60243-1

Other properties

dry / cond

Humidity absorption	2.3 / *	%	Sim. to ISO 62
Density	1130 / -	kg/m ³	ISO 1183

