



## PAR (MANCHESTER) LTD

Warre Street  
Ashton-Under-Lyne  
Lancashire  
OL6 8NW  
t : +44(0) 161 339 6600  
f : +44(0) 161 343 2088  
e : sales@par-group.co.uk

## PAR (PRESTON) LTD

Club Street  
Bamber Bridge  
Lancashire  
PR5 6FN  
t : +44(0) 1772 322 114  
f : +44(0) 1772 627 524  
e : preston@par-group.co.uk

## PAR (YORKSHIRE) LTD

Warre Street  
Ashton-Under-Lyne  
Lancashire  
OL6 8NW  
t : +44(0) 1924 444 529  
f : +44(0) 161 343 2088  
e : sales@par-group.co.uk

## Nylon 12

A semi-crystalline engineering plastic with very high toughness and good chemical resistance for varied applications.

The main characteristics of Nylon 12 are as follows:

- Extremely tough
- Good sliding properties
- Abrasion resistant
- Good chemical resistance to many oils, greases, diesel, petrol and cleaning fluids
- Light
- Low water absorption
- Good electrical insulation
- Easily machined
- Dimensionally accurate
- Easily welded and bonded

Nylon 12 is commonly used in transport and conveyor technology, food technology, textile, packing and paper processing machinery, printing and drinks dispensing machinery, electrical engineering and the automotive industry.

Typical applications of Nylon 12 include:

- Conveyor screw sleeves
- Friction strips
- Gear wheels
- Fan impellers
- Castors
- Impact plates
- Cutting pads
- Friction bearings
- Housing parts
- Switch parts
- plug parts
- Damping plates



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## Technical Information

Information to be used as a guide only. It corresponds with our current knowledge and indicates possible applications. We cannot guarantee suitability for a specific application. Unless otherwise stated these values represent averages taken from injection moulded samples.

Properties	Unit	Test Method DIN ASTM	Result Dry	Result Wet*
<b>MECHANICAL</b>	-	-	-	-
Density	g/cm <sup>3</sup>	53479	1.02	-
Tensile strength at yield	MPa	53455	35	-
Tensile strength at break	MPa	53455	52	46
Elongation at Break	%	53455	240	-
Modulus of elasticity in tension	MPa	53457	1800	-
Modulus of elasticity in flexure	MPa	53457	-	-
Ball indentation hardness	MPa	53456	95	-
Impact strength (Charpy)	KJ/m <sup>2</sup>	53453	no break	-
Creep rupture strength after 1000 hours with static load	MPa	-	23	-
Time yield limit for 1% elongation after 1000 hours	MPa	-	3.5	-
Coefficient of friction against hardened and ground steel p+0.05 N/mm <sup>2</sup> , v=0,6 m/s	-	-	0.32 - 0.38	-
Wear conditions as above	µm/km	-	0.8	-
<b>THERMAL</b>	-	-	-	-
Crystalline melting point	°C	53736	179	-
Glass transition temperature	°C	53736	41	5
Heat distortion temperature method A	°C	ISO 75	50	-
Heat distortion temperature method B	°C	ISO 75	140	-
Max. service temperature short term	°C	-	140	-
Max. service temperature long term	°C	-	80	-
Coefficient of thermal conductivity	W/(m K)	-	0.23	-
Specific heat	J/(g K)	-	2.1	-
Coefficient of thermal expansion	10 <sup>-5</sup> /K	-	10	-
<b>ELECTRICAL</b>	-	-	-	-
Dielectric constant at 10 (5) Hz	-	53483	3.1	3.6
Dielectric loss factor at 10(5) Hz	-	53483	0.03	0.04
Specific Volume Resistance	Ωcm	53482	2 x 10 (15)	10 (14)
Surface Resistance	Ω	53482	10 (14)	10 (12)
Dielectric strength 1 mm	kV/mm	53481	33	30
Tracking resistance	-	53480	KB 3b	CTI600
<b>MISCELLANEOUS</b>	-	-	-	-
Moisture Absorption: Equilibrium in standard atmosphere (23°C / 50% relative humidity)	%	53714	0.7	-
Water absorption at saturation at 23°C	%	53495	1.6	-
Resistance to hot water, washing soda	-	-	resistant	-
Flamability	-	UL 94	V2	-
Resistance to weathering	-	-	not resistant	-