

# Thermoplastics

## Thermoplastic properties

## Chemical resistance at 20°C

Materials	Short code	Density (DIN 53479) g/cm <sup>3</sup>	Melting point °C 850 Din 53460	Thermal conductivity W / k · M J / g · K Watt per metre * Kelvin	Specific heat capacity 10 <sup>-5</sup> / °C Joule per gram * Kelvin	Coefficient of elongation °C	Short term operating temperature °C	Continuous operating temperature	Humidity absorption in normal conditions 23/50%	Humidity absorption in case of immersion 20° %	Fire properties to UL	Chemical resistance at 20°C							
												Mineral lubricants and fats	Petrol	Trichlorethylene	Carbon tetrachloride	Acids	Bases		
<b>Polyamide</b>																			
Polyamide 6 (polyamide B)	PA 6	1.14	220	0.233	1.675	7...8	160	-40 100	2.5...3	8.5... 10	94V-2	+	+	o	+	o	+	Particularly tough, very abrasion resistant, little static charge.	
Polyamide 6 + 25% glass fibre	PA 6 GF	1.30	220	0.23	1.5	2...3	200	-40 120	1.5	6	94HB	+	+	o	+	o	+	Very high strength and rigidity, deformation resistant, minimal heat elongation	
<b>Polyacetale</b>																			
Polyoxymethylene (homo-polymerized)	POM	1.42	170	0.233	1.465	9	150	-40 110	0.25	0.8	94HB	+	+	o	+	o	o	Extremely hard, high strength and rigidity, impact and abrasion resistant	
<b>Polyethylenes</b>																			
HD-polyethylene	HDPE	0.955	130	0.43	1.86	18	100	-60 80	0	>0.1	94HB	+	+	o	-	+	+	Heat and UV stabilized. High chemical resistance, food-safe, very tough, minimal rigidity	
Recycled, coloured	PE - REG	0.955	130	0.43	1.86	18	100	-60 80	0	>0.1	94HB	+	+	o	-	+	+	High chemical resistance, very tough, inexpensive, not for circular brushes	
Electrically conductive PE	PE - EL	0.99	130	0.43	1.86	18	100	-20 80	0	>0.1	94HB	+	+	o	-	+	+	High chemical resistance, electrically conductive. Surface resistance < 10 <sup>6</sup> Ohm. It is used especially in areas with an explosion risk, where it is imperative to avoid static sparking.	
<b>Polypropylenes</b>																			
Polypropylene	PP	0.915	165	0.221	1.68	16	140	0 100	0	>0.1	94HB	+	o	o	-	+	+	Good chemical stability, low volumetric weight, minimal impact resistance under -5°C. Food-safe. Most popular material to use, good price / performance ratio.	
Polypropylene + 20% glass fibre	PP GF	1.05	165	0.25	1.47	5...17	140	-10 110	0	>0.2	94HB	+	o	o	-	+	+	Average rigidity and hardness, good chemical resistance, minimal distortion.	
<b>Miscellaneous</b>																			
Polyvinylchloride high impact resistance	PVC	1.38	85	0.16	1.05	8	80	0 60	0	>0.1	94V-0	+	o	-	-	+	+	Good chemical resistance, good strength and deformation resistance, inexpensive.	

+ resistance  
o limited resistance  
- non-resistance

This table contains indicative values. It is recognised that these values are influenced by processing conditions, modifications and environmental factors.