

THERMOPLASTIC PRODUCT	PROPERTIES	ABBREVIATION	DENSITY kg/m <sup>3</sup> DIN 53479, ISO 1183	PROCESSING					MECHANICAL										ELECTRICAL					THERMAL				
				DRIVING TEMPERATURE °C	DRYING TIME HRS. (Depending on the moisture content and drying units)	PROCESS TEMPERATURE °C	MOULD TEMPERATURE °C For full crystallinity	TENSILE STRENGTH TENSILE STRESS AT YIELD/ TENSILE STRESS AT BREAK* N/mm <sup>2</sup> DIN 53465, ISO 527 (r=50 mm/min, v=5 mm/min)	ELONGATION AT BREAK % DIN 53465, ISO 527	TENSILE ELASTICITY MODULUS N/mm <sup>2</sup> DIN 53467, ISO 527	BALL-PRESSURE HARDNESS H 350/30 - H96/130 N/mm <sup>2</sup> DIN 53466, ISO 2039/1		IZOD IMPACT STRENGTH ISO 180/1C (nb=no break)		IZOD NOTCHED IMPACT STRENGTH ISO 180/1A (nb=no break)		VOLUME RESISTIVITY Ω·cm DIN 0303-T 30, IEC 99	SURFACE RESISTIVITY Ω·cm DIN 0303-T 30, IEC 93	DIELECTRIC STRENGTH kV/mm DIN 0303-T21, IEC 249/1	COMPARATIVE TRACKING INDEX IEC 112		MAX. TEMPERATURE IN PRACTICAL USE °C (According to IEC 216-1)	VICAT SOFTENING TEMPERATURE °C ISO 306	HEAT DEFLECTION TEMPERATURE HD7/A °C ISO 53461, ISO 75	COEFFICIENT OF LINEAR THERMAL EXPANSION (23-80°C) 10 <sup>-7</sup> /K	WATER ABSORPTION DIN 53495/1, ISO 62 (23°C, saturated)		
											N/mm <sup>2</sup>	N/mm <sup>2</sup>	kJ/m <sup>2</sup> 23°C	kJ/m <sup>2</sup> 30°C	CTI	CTI-M												
																				CTI	CTI-M							
Polyethylene (low density)	PE-LD	0.914-0.939	70-80	1	170-270	15-60	8-20	-	-	150-450	12-25	0 Br.	0 Br.	0 Br.	1.7-7.2	10 <sup>15-17</sup>	10 <sup>13-14</sup>	22-150	600	600	90	85-120	35	2.0-2.4	-			
Polyethylene (high density)	PE-HD	0.933-0.966	80-90	1	200-290	20-60	25-100	-	-	700-1500	30-64	0 Br.	0 Br.	2.6-6 Br.	1.7-7.2	10 <sup>15-17</sup>	10 <sup>13-15</sup>	22-150	600	500-600	110	100-128	40-50	1.2-1.8	0.01-0.04			
Ethylene-vinylacetate	E/VA	0.920-0.960	60-70	1	130-240	10-50	10-20	-	-	40-120	0 Br.	0 Br.	0 Br.	0 Br.	0 Br.	10 <sup>15</sup>	10 <sup>13</sup>	60	600	600	65	-	34	1.6-2.0	-			
Polypropylene	PP	0.894-0.912	90-120	3	200-300	10-90	15-37	-	-	500-1600	8-13	60-82	11-12	2.0-4.9	1.3-2.6	10 <sup>15-17</sup>	10 <sup>11-14</sup>	70-140	>600	400-600	100	80-100	50-70	1.1-1.6	0.1			
Polypropylene + 40% talc filled	PP + Talc 40	1.200-1.240	90-120	3	220-280	20-60	22-66	-	-	3600-4800	70-83	10-50	7-12	1.8-3.6	1.5-2.0	10 <sup>14-16</sup>	10 <sup>13-14</sup>	60-110	>600	>600	100	90-115	70-130	0.4-0.9	0.1			
Polypropylene +30% glass fibre filled	PP + GF 30	1.110-1.140	90-120	3	220-300	20-70	60-100	3	-	4800-7000	90-100/100	10-28	10-27	4.50	4.0-7.3	10 <sup>15-16</sup>	10 <sup>13-15</sup>	30-63	600	600	110	120-145	110-155	0.2-0.4	-			
Polyvinyl chloride hard	PVC hard	1.38-1.55	-	-	170-210	20-60	32-60	-	-	1500-3500	100-125	240-0 Br.	40-80	3.5-6	3-4	10 <sup>15-16</sup>	10 <sup>13-14</sup>	30	600	600	85	77-83	72-76	0.70-0.75	0.1			
Polyvinyl chloride soft	PVC soft	1.18-1.35	60-70	1-3	160-190	10-60	5-24	-	-	-	-	-	-	-	>10 <sup>11</sup>	-	-	-	-	55	-	-	-	-	-			
Polystyrene standard	PS	1.05	80	2-3	180-280	10-70	30-59	1.6	-	3000-3300	39-80	9-20	9-20	1.5-2.0	1.5-2	10 <sup>13-14</sup>	10 <sup>13-14</sup>	375-475	120-175	75	84-101	70-86	0.8	-				
Styrene-butadiene, impact resistant	S/B	1.05	60-80	2-4	190-280	10-70	20-40	20-60	-	1600-2800	140-150/58	20-90	20-60	4-12	3-6	>10 <sup>14</sup>	10 <sup>13-14</sup>	150-155	500	150-175	75	75-96	75-85	0.9-1.0	-			
Styrene-acrylonitrile	SAN	1.08	80	2-4	200-270	40-80	70-84	3-4	-	3700-3900	120-165-175	-	-	2-3	-	10 <sup>16</sup>	10 <sup>14</sup>	95	400-500	175-250	85	106-117	98-104	0.7	0.0-10.20			
butadiene-styrene	ABS	1.05-1.07	80-85	1-6	210-270	50-80	58-62	-	-	1900-3000	65-115	60-0 Br.	30-135	8-35	3-17	10 <sup>14-15</sup>	10 <sup>13</sup>	85	450-600	200-475	80	87-101	90-100	0.8-1.1	0.30-0.40			
Acrylonitrile-ester	ASA	1.07	85	2-4	240-280	40-80	40-56*	-	-	2000-2600	65-100	60-0 Br.	30-120	10-45	3-10	10 <sup>14-15</sup>	10 <sup>13</sup>	90-105	600	600	90	90-106	95-104	0.8-1.1	0.45-0.45			
Polyethyl methacrylate	PMMA	1.15-1.19	60-80	4-6	190-270	50-90	49-78	3-8	-	3100-3400	170-200*	12-16	11-16	2.0-2.2	1.8-2.0	10 <sup>15</sup>	10 <sup>14</sup>	40-60	600	600	90	85-110	75-100	0.7-0.8	-			
Polyoxymethylene	POM	1.39-1.42	100-110	1-2	185-230	60-100	55-62	25-75	-	2600-3000	130-150/185-	80-0 Br.	50-160	4-7	4-7	10 <sup>14-15</sup>	10 <sup>13-14</sup>	70-100	>600	>600	100	140-165	100-110	1.1	1.5-2.2 0.7-			
Polyoxymethylene + 25% glass fibre filled	POM + GF 25	1.58	100-110	1-2	190-220	80-110	110-135	2-3	-	4700-9100	190	28-32	30-37	5-6	6	10 <sup>14-15</sup>	10 <sup>13-14</sup>	50-90	600	600	110-120	158-165	155-163	0.3-0.4	0.9 0.9-1.0			
Cellulose acetate	CA	1.26-1.29	70-80	3-4	170-210	40-80	25-59*	-	-	1400-2800	39-80	0 Br.	250-0 Br.	10-60	-	10 <sup>13-15</sup>	10 <sup>13-14</sup>	25-30	>600	600	90	50-100	42-59	1.02-1.25	-			
Cellulose propionate	CP	1.17-1.21	60-90	2-4	180-220	40-80	20-48*	-	-	1000-2200	35-78 25-	0 Br.	0 Br.	-	-	10 <sup>14-15</sup>	10 <sup>15</sup>	32-36	>600	600	90	69-108	62-94	1.20-1.45	-			
Cellulose acetate butyrate	CAB	1.17-1.21	60-90	2-4	180-220	40-80	17-42*	-	-	800-1900	70	-	-	-	-	10 <sup>14-15</sup>	10 <sup>14-15</sup>	32-34	>600	600	90	65-102	60-94	1.19-1.48	-			
Polyamide 6	PA 6	1.13	75-100	2-4	250-290	50-90	38-70	50-250	-	1000-1700	70	0 Br.	250-0 Br.	10-60	5-10	10 <sup>12</sup>	10 <sup>13</sup>	30-80	600	600	160-180	154-210	50-95	0.70-1.40	-			
Polyamide 6 + 30% glass fibre filled	PA 6 + GF 30	1.36	75-100	2-4	270-290	80-120	95-170	4-12	-	6000-7000	70	44-100	55-90	20-30	10-20	10 <sup>12</sup>	10 <sup>10</sup>	20-80	400-600	200-450	200	200-270	170-210	0.20-0.70	-			
Polyamide 6 + 30% mineral	PA 6 + Mineral 30	1.34-1.37	75-100	2-4	270-290	80-100	40-80	-	-	1800-2500	150*	0 Br.	65	14-18	4.0-4.5	10 <sup>12</sup>	10 <sup>10</sup>	20-60	500-575	350-400	180	200-208	90-100	0.50-0.90	8.0-10.0 6.0-			
Polyamide 66	PA 66	1.13	75-100	2-4	270-300	50-90	50-84	30	-	1400-2300	130*	21-0 Br. 32	30-300	8-0 Br.	3-10	10 <sup>13-14</sup>	10 <sup>13-14</sup>	50-110	500-600	450-600	200	200-255	90-110	0.70-1.00	7.0 6.0-7.0			
Polyamide 66 + 30% glass fibre filled	PA 66 + GF 30	1.36	75-100	2-4	280-300	80-120	100-180	2.5-20	-	7000-8500	110	75	40-60	15.5-50	10-11	10 <sup>12-13</sup>	10 <sup>10</sup>	40-80	425-600	400-425	240	200-257	220-255	0.15-0.70	6.0 9.0 5.0			
Polyamide 66 + 40% mineral	PA 66 + Mineral 40	1.42-1.50	75-100	2-4	270-300	80-100	55-97	7	-	2800-5000	100-200*	26-0 Br.	65	5.2-9.0	1.5-4.0	10 <sup>12-13</sup>	10 <sup>10</sup>	40-80	525-550	425-435	240	200-260	120-190	0.50-0.80	6.0 4.9-5.3			
Polyamide 610	PA 610	1.06-1.09	75-100	2-4	260-290	40-120	50-70*	-	-	1300-1500	130-160*	0 Br.	0 Br.	5-37	3.5-5.0	10 <sup>12</sup>	10 <sup>13-14</sup>	40-60	600	600	180	193	55-80	0.80-1.00	3.0-3.6			
Polyamide 11	PA 11	1.02-1.06	75-100	2-4	200-270	40-80	45-60	-	-	1100-1400	80	0 Br.	0 Br.	-	-	10 <sup>12-13</sup>	10 <sup>10</sup>	18-26	600	600	140	160	50-65	1.00-1.20	-			
Polyamide 12	PA 12	1.01-1.05	75-100	2-4	200-270	30-100	52-65	-	-	1000-2000	75	60-0 Br.	45-0 Br.	4-8	2-4	10 <sup>13</sup>	10 <sup>11-12</sup> 10 <sup>11</sup>	28-34	575-600	550-600	140	97-152	42-80	0.90-1.20	1.5-2.5 6.5-			
Polyamide 6/6T	PA 6/6T	1.18	80-100	2-6	310-340	60-100	90-100*	10-20	-	3200-3500	90-120 190	-	-	12	5	10 <sup>14-15</sup>	10 <sup>13</sup>	100	600	600	250	280	100	0.60-0.80	7.5			
Polyphthalamide + 33% glass fibre filled	PPA + GF 33	1.46	120	4	320-345	135-165*	193	2.1	-	13100	-	38.5	-	7.8	-	2 x 10 <sup>15</sup>	-	550	-	-	285	280	0.24	0.21				
Polyphthalamide + 45% glass fibre filled	PPA + GF 45	1.56	120	4	320-345	135-165*	228	2.1	-	17200	-	51.7	-	9.9	-	2 x 10 <sup>15</sup>	-	550	-	-	287	280	0.15	0.12				
Polyphthalamide + 65% glass fibre/min.	PPA + GF/Min. 65	1.78	120	4	320-345	135-165*	374	1.5	-	23700	-	35.4	-	7.2	-	4 x 10 <sup>15</sup>	-	600	-	-	277	280	0.11	0.10				
Polycarbonate	PC	1.20	120	4	280-320	80-100	55-63	>50	-	1800-2400	110	0 Br.	30-0 Br.	70-95	-	10 <sup>14-17</sup>	10 <sup>13-15</sup>	10-30	250-300	100-120	130	140-148	125-135	0.70-0.80	-			
Polycarbonate + 30% glass fibre filled	PC + GF 30	1.44	120	4	310-330	80-130	70-110	2.0-3.5	-	4000-5800	110	30-70	25-35	2.0-7.5	-	10 <sup>15-17</sup>	10 <sup>14</sup>	20-45	150-175	100	140	147-165	138-150	0.28-0.30	0.35			
Polycarbonate, high temperature resistant	PC-HT	1.14-1.18	130	4-8	300-360	100-120	65-100*	-	-	2250	150	0 Br.	0 Br.	5-12	5-8	>10 <sup>14</sup>	>10 <sup>16</sup>	35	300-600	100	140-180	160-205	138-179	0.25-0.75	0.28			
Polyethylene terephthalate	PET	1.38-1.40	130	3	260-280	130-140	55-80	-	-	2200-2800	115	-	-	2-3	-	10 <sup>16</sup>	10 <sup>14</sup>	45-50	325-350	175	130	80-80	0.70-0.80	-				
Polyethylene terephthalate + 30% glass fibre filled Polybutylene terephthalate	PET + GF 30	1.65-1.76	130	3	260-280	130-140	150-160	-	-	10000-13000	110-140 210	29-40	25-35	7-10	8-10	10 <sup>14-16</sup>	10 <sup>14-16</sup>	22-50	250-275	175	155	210-240	220-230	0.30	0.15-0.40			
Polybutylene terephthalate	PBT	1.30	120	3	250-275	60-100	40-60*	>50	-	2500-2800	250 70-130	30-130	20-80	4-20	3-6	10 <sup>15-16</sup>	10 <sup>13-14</sup>	100-140	500-600	400-500	150	150-200	60-70	1.30-1.60	0.50			
Polybutylene terephthalate + 30% glass fibre filled	PBT + GF 30	1.50-1.65	120	3	250-275	60-100	120-150	2-4	-	9000-12000	100-220	40-160	40-70	10-40	10-15	10 <sup>15-16</sup>												