

TECHNICAL PROPERTIES



Attribute of the used raw materials

PA 6	PA 6.6	POM-C	PET	PVDF	PVC-U	PP	PE-HD	PE-UHMW	PMMA	ABS	PC	PEEK	PEEK-mod	PEEK 30 GF
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	Norm	Unit														
PHYSICAL PROPERTIES																
1. Specific Gravity	ISO 1183	g/cm ³	1,13	1,14	1,39	1,39	1,77	1,36	0,91	0,95	0,93	1,18	1,04	1,2	1,32	1,48
2. Water absorption	DIN 53495	%	3	2,4	0,2	0,2	0,04	0,2	0,01	0,01	0,01	0,3	0,4	0,35	0,5	0,06
3. Chemical resistance			-	-	-	-	-	DIN 8061	-	DIN 8075	DIN 8075	-	-	-	-	-
4. Max permissible service temperature (no stronger mech stress involved)	-	°C	70	80	110	110	150	60	100	90	90	75	70	120	260	260
lower temperature limit	-	°C	-40	-30	-50	-20	-30	-15	5	-50	-150	-40	-50	-150	-40	-40
MECHANICAL PROPERTIES																
1. Tensile strength at yield	ISO 527	M Pa	76	90	63	90	50	55	33	22	17	70	41	65	97	141
2. Elongation at yield	ISO 527	%	-	-	-	-	9	3	14	11	20	-	4	-	4,9	-
3. Tensile strength at break	ISO 527	M Pa	-	-	≥20	-	46	30	-	31	40	72	35	-	-	118
4. Elongation at break	ISO 527	%	≥50	>40	220	15	80	≥10	≥50	≥600	≥350	5	45	110	≥60	3
5. Impact strength	ISO 179	kJ/m ²	no break	no break	21	>50	252	no break	no break	no break	no break	-	no break	no break	no break	27,5
6. Notched impact strength	ISO 179	kJ/m ²	5,5	6	6	-	22	3	13	20	no break	1,5	37	30	8,2	6,3
7. Ball indentation hardness/Rockwell	ISO 2039-1	M Pa	160/70	160/-	135	170	80	120	71	40	36	185	84	110	M99	-
8. Shore-D	DIN 53505		77	-	85	-	78	82	70	62	62	90	70	85	90	87
9. Flexural strength	ISO 178	M Pa	-	-	-	-	80	90	-	30	27	125	70	100	170	210
10. Modulus of elasticity	ISO 527	M Pa	3250	3100	2600	3600	2000	3000	1450	900	680	3300	2100	2300	3660	8100
THERMAL PROPERTIES																
1. Vicat softening temp VST/B/50	ISO 306	°C	-	-	150	-	140	75	83	74	80	100	96	150	250	-
VST/A/50		°C	204	-	-	-	160	-	-	125	-	-	-	-	-	-
2. Heat deflection temperature HDT/B	ISO 75	°C	160	-	155	-	145	72	95	70	65	95	97	137	240	293
HDT/A		°C	65	85	95	75	90	-	-	41	42	-	-	128	152	277
3. Coef of linear thermal expansion	DIN 53752	K-1 x 10-4	0,85	0,80	1,1	0,8	1,2	0,8	1,5	1,55	2	0,7	1	0,65	0,47	0,22
4. Thermal conductivity at 20 °C	DIN 52612	W(m x K)	0,28	0,28	0,31	0,29	0,13	0,14	0,22	0,43	0,42	0,19	0,25	0,21	0,25	0,24
ELECTRICAL PROPERTIES																
1. Volume resistivity	VDE 0303	x cm	10 ¹²	10 ¹²	10 ¹³	10 ¹⁵	≥10 ¹³	≥10 ¹⁵	10 ¹⁵	≥10 ¹⁵	≥10 ¹⁴	≥10 ¹⁵	≥10 ¹⁴	≥10 ¹⁷	4,9 x 10 ¹⁸	105
2. Surface resistivity	VDE 0303		10 ¹³	10 ¹³	10 ¹³	10 ¹⁴	>10 ¹⁴	≥10 ¹³	10 ¹⁶	10 ¹⁶	10 ¹²	10 ¹⁵	10 ¹³	-	10 ¹⁵	10 ⁷
3. Dielectric constant at 1 M Hz	DIN 53483		3,6	3,3	3,8	3,2	7,25	3	2,3	2,3	3	2,9	2,8	3	3,2	-
4. Dielectric loss factor at 1 M Hz	DIN 53483		0,021	0,026	0,008	0,014	0,18	0,01	0,0002	0,0002	0,0001	0,03	0,01	0,008	0,003	-
5. Dielectric strength	VDE 0303	kV/mm	25	27	20	22	22	31	-	17	45	30	150	27	19	24,5
6. Tracking resistance	DIN 53483		CTI 600	CTI 600	CTI 600	CTI 600	CTI 300	KB 600	KB ≥600	KB ≥600	KB ≥500	CTI ≥600	KB ≥600	CTI 250	CTI 150	-
ADDITIONAL DATA																
1. Bondability			+	+	0	+	0	+	0	0	-	+	+	+	0	+
2. Physiological indifference according	EEC 90/128		+	0	+	-	-	+	+	+	+	+	-	0	+	-
3. Friction coefficient	FDA		+	+	+	+	+	+	+	+	+	+	+	+	+	-
3. Friction coefficient	DIN 53375		0,38	0,35	0,35	0,25	0,34	0,6	0,3	0,3	0,25	0,55	0,5	0,55	0,34	0,11
4. Flammability	UL 94		HB	V-2	HB	HB	V-0	V-0	HB	HB	HB	HB	HB	HB	V-0	V-0
5. UV stabilisation			-	+ / 0	-	-	+	0	0	0	-	+	-	-	0	+
CHEMICAL PROPERTIES																
1. Acid resistance			-	-	+	+	+	+	+	+	+	+	+	+	+	+
2. Hydroxid resistance (dilute)			+	+	+	0	+	+	+	+	+	+	0	-	+	+
3. Hydrocarbonat resistance			+ / 0	+ / 0	+	+	+	+	+	+	+	+	+	0	+	+
4. CKW resistance			-	-	0	0	+	-	0	-	-	0	0	-	0	0
5. Aromatic resistance			+ / 0	+ / 0	+	+	+	0	-	0	0	-	-	-	+	+
6. Ketone resistance			+	+	+	+	0	-	+	+	+	-	-	-	+	+
7. Resistance against hot water			+ / 0	+ / 0	+	-	+	-	+	0	0	0	0	0	+	+

The physical data contained in this table are typical values. They are obtained on the test specimens under specific conditions and represent average values of a large number of tests. The results obtained on these test specimens cannot be applied to finished parts without reservations, so behaviour is influenced by processing and shaping.

+ yes 0 limited - no

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