

Technical Data

Technical Properties	Test Method	Units	Nylon 6 Ext PA6	Nylon 6 Cast PA6	Nylon 66 PA66	Nylon 12 PA12	Acetal Homo POM	Acetal Copol POM	Acrylic PMMA	PC	PVC	ABS	PET	PTFE	PVDF	UHMW PE	HDPE	Polypropylene	PSU	PES	PEI	PEEK	PPS 40%GF	
Physical Properties																								
Specific gravity	DIN 53479	g/cm ³	1.14	1.15	1.15	1.03	1.42	1.41	1.19	1.20	1.40	1.07	1.37	2.15	1.78	0.93	0.95	0.91	1.24	1.37	1.27	1.32	1.64	
Water absorption	20°C 50% RH	% in 24 hr	2.5-4.0	2.0-3.0	2.0-3.0	1.0	0.25	0.25	0.30	0.2	0.03	0.40	0.20	None	0.04	0.01	0.01	0.01	0.25	0.22	0.25	0.15	0.01	
Upper temperature short term		°C	160/140	160	170	140	140	140	90	140	70	80	170	250	150	90	90	100	185	226	200	280	260	
Temperature range long term		°C	-40/+100	-40/+105	-30/+120	-50/+80	-40/+100	-40/+100	75	-40/+130	60	-35/+70	-20/+120	-250/+250	-40/+110	75	75	80	-100/+160	200	170	250	230	
Flammability	UL94		V-2	V-2	V-2	HB	HB	HB	HB	V-2	V-0/5V	HB	HB	V-0	V-0	HB	HB	HB	V-0	V-0	V-0	V-0	V-0	
Mechanical Properties																								
Tensile strength at yield	DIN 53455	N/mm ² Dry Humid	80 60	85 60	90 70	55 45	78	70	80	65	55	40	80	25	55	25	23	27	75	85	105	90	160	
Elongation at break	DIN 53455	% Dry Humid	50 160	100	30 150	>200	>30	>35	5.5	80	33	30	>60	250	50	>350	>600	>800	>15	>40	60	45	1.5	
Modulus of elasticity	DIN 53457	N/mm ² Dry Humid	3000 1500	3300 2000	3300 2000	1800	3200	3100	3300	2300	3100	2300	3000	360	2100	680	1000	800	2500	2900	3000	3500	14500	
Impact Strength	DIN 53453	kJ/m ² Dry Humid	NB	NB	NB	NB	NB	NB	20	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	35	
Notched impact strength	DIN 53453	kJ/m ² Dry Humid	>3 NB	>4 >4	>3 >15	>10 >20	>8	>10	2	25	>4	14	>4	16	6	NB	NB	20	7	>7	10	30	9	
Ball indentation hardness	DIN 53456	N/mm ² Dry Humid	170 120	180 140	180 140	100	160	160	185	110	120	90	180	30	110	36	40	45	150	150	170	180	180	
Co-efficient of friction	DIN 53375	Dry Humid	0.38 0.42	0.20-0.35	0.35 0.45	0.32 0.38	0.32	0.32	0.45	0.52-0.58	0.6	0.5	0.22	0.10	0.3	0.25	0.30	0.35	0.29			0.30-0.38		
Electrical Properties																								
Dielectric constant	DIN 53483	at 50 Hz Dry Humid	3.7 7.0	3.7	3.6 5.0	3.6	3.7	3.4	3.6	3.0	3.0	2.4	3.4	2.1	8.0	2.3	2.5	2.3	2.7	3.5	3.2	3.4	4.0	
Volume resistivity	DIN 53482	Ωcm Dry Humid	10 ¹⁵ 10 ¹²	10 ¹⁵ 10 ¹²	10 ¹⁵ 10 ¹²	2 x 10 ¹⁵ 10 ¹⁵	10 ¹⁵	10 ¹⁵	>10 ¹⁵	10 ¹⁶	10 ¹⁵	10 ¹⁶	4 x 10 ¹⁶	10 ¹⁸	10 ¹⁵	5 x 10 ¹⁶	>10 ¹⁶	>10 ¹⁶	5 x 10 ¹⁶	>10 ¹⁷	>10 ¹⁵	4.7 x 10 ¹⁶	10 ¹⁶	
Tracking resistance	DIN 53480		>600	>600	>600	>600	>600	>600	>600	KC/F300	450	KA3b	KC325		KC125	>600	>600	>600		KC150		KC175	KC180	
Dielectric strength	DIN 53481	kV/mm	12	20	30	33	20	20	30	35	20-40	>20	>70	40-80	22	90	70	350	>40	63	33	21	22	
Thermal Properties																								
Crystalline melting point	DIN 53736	°C	220	222	255	178	175	165		230	110	120	255	320	178	138	130	168	190	230	215	340	280	
Coef - thermal conductivity	DIN 52612	W/m°C	0.23	0.28	0.23	0.23	0.31	0.31	0.19	0.21	0.16	0.3	0.21		0.15	0.42	0.43	0.22	0.25	0.18	0.22	0.25	0.28	
Coef - linear expansion	DIN 53752	10 ⁻⁴ /°C	50-70	50-60	60-70	30-70	80-100	80-100	70	60-70	70	95	70-80	140	120	120	120	100	56	54	56	47	14-40	
Chemical and UV Resistance																								
Effect of sunlight			Slight discolouration	Slight discolouration	Slight discolouration	Slight discolouration	Chalky White	Chalky White	None	Discoloured	None	UV attack		None	OK/some chalking	Discolours & embrittles	Discolours & embrittles	Discolours & embrittles	OK	OK	OK			
Weak acids			RM	RM	RM	RM	RS	RS	RS	RM	RM	RS	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Strong acids			A	A	A	A	A	A	A	A	A	A	RS	RM	RM	A	A	A	RS	A	RS	RS	RM	RM
Weak alkalis			RS	RS	RS	A	RM	RM	RS	RS	RM	RS	A	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM
Strong alkalis			A	A	A	A	RM	RM	A	A	RM	A	A	RM	RM	A	A	A	RS	A	RS	RS	RM	RM

RS: Resistant to some RM: Resistant to many A: Attacked by acids and alkalis

All information is supplied for reference only

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