Physical Properties Chart

	TEST METHOD			UNITS	ACETAL	ACETAL MAX	ACRYLIC	HDPE	NYLON	NYLON G NYLON MAX	PE100	PEEK	PETP	PETP MAX	POLYCARBONATE	POLYPROPYLENE	PTFE	PVC	UHMWPE	UHMWPE ECO	UHMWPE MAX
GENERAL	ISO	ASTM	DIN																		
Density	1183		53479	g/cm³	1,41	1,35	1,19	0,955	1.14	1.14	0,95	1,31	1,38	1,45	1,2	0,915	2,17	1,36	0,93	0,935	0,94
Water Absorption	62		53715	%	0,20	0,20	2,10	0%	2,80	2,80	0	0,20%	0,2%	0,25%	0,40%	0%	0,00	0,5			
@ 23°C Saturation	62		53495	%	0,65	0,60	1,80	0,02%	9	9	0,02	0.40%	0,50%	0,48%	0,45	0,03%	-	0,6	0,02	0,02	0,01
Colour				-	WHITE	BLUE	CLEAR	WHITE	WHITE	BLACK	BLACK	BEIGE	WHITE	LIGHT GREY	CLEAR	NATURAL / WHITE	WHITE	GREY	WHITE	BLACK	BLUE
Suitability for Food contact				-	YES	YES	YES	YES	YES / NO	NO	YES NO	YES	YES	YES	YES	YES	YES	YES / NO	YES	NO	NO
MECHANICAL PROPERTIES																					
Tensile Strength at yield at break	527		53455	N/mm²	63	44	72 MPA	30	54	55	31	110	85	76	75	30	-	51	20	22	23
Elongation at break	527		53455	%	31	-	8	500	180	180	510	-	50	7	3	70	-	10%	-	-	-
Tensile Modulus of elasticity	527		53455	N/mm²	2600	2200	3300	800	1700	1700	790	4400	3700	3450	2400	1400	-	3040	780	910	750
Compression test 1% strain	899		53444	N/mm²	NA	19	-	3	6	6	3	-	20	-	-	4	-	-	5	6	-
Impact Strength Charpy 7,5J	R179		53453	-	NO BREAK	NO BREAK	20	NO BREAK	NO BREAK	NO BREAK	NO BREAK	NO BREAK	NA	30	NO BREAK	NO BREAK	-	-	NO BREAK	NO BREAK	NO BREAK
Notched impact strength Charpy	R179/3C		53453	Kj /mm	6	7	-	12	25	26	11	3.5	5	2.5	9	7	-	3	101	90	-
Ball Indentation hardness	2039,1		53456	N/mm²	125	140	-	40	80	81	41	230	170	160	100	70	-	120	36	37	37
Rockwell hardness	2039,2		53456	-	M88	M84	-	63 SHORE D	M85	M85	63 SHORE D	M105	M95	M94	85D	R64	55D	82	-	-	-
Coefficient of friction to steel	8295		53375	-	0,35	.15 - .25	-	0,32	0,42	0,3	0,32	0,4	0,25	0,15	-	0,35	.05 - .1	-	0,2	.15 -.25	0,15
THERMAL PROPERTIES																					
Melting Point	3146			°C	165	165	106	130	220	220	130	340	255	255	150	160	-	-	140	141	141
Thermal Conductivity	22007,2		52612	W/(Km)	0.3	0,3	0,19	.39	0.25	0.25	.39	.25	.28	.29	0,21	0.22	0.26	0,14	0,4	0,4	0,4
Deformation at temperature HDT	75		53461	°C	95	94	-	45	83 C	83	45	-	95	75	-	65	-	-			
Linear expansion coefficient 23 -60°C	11359		53752	-	120 X 10^{-6} K^{-1}	121	0,71	180 X $10^{-6}K^{-1}$	90X 10^{6} K	90X 10^{6} K	180 X $10^{-6}K^{-1}$	50 X $10^{-6}K^{-1}$	70 X 10^{6} K^{1}	65 X 10^{6} K^{1}	0.7	160 X 10^{6} K^{-1}	160 X 10^{6} K^{-1}	-	200 X 10^{-6}	200 X 10^{-6}	190 X 10^{-6}
Operating Temperature continuously				°C	100	100	65	80	88	88	80	250	115	115	110	95	240	75	80	80	80
Operating Temperature short period no load				°C	140	140	80	90	150	150	90	300	170	160	125	110	290	-	110	110	112
Operating Temperature minimum				-	-30	-35	0	-50	-40	-40	-50	-10	-20	-20	-20	0	-20	-10	-180	-150	-150
Flammability			UL94	-	HB	HB	HB	HB	HBV2	HBV3	HB	VO	HB	HB	HB	HB	-	V0	HB	HB	HB
Oxygen index [LOI]	4589	D2863	22117	%	15	15	17	18	24	24	18	-	22	22	26	18	-	-	19	19	19
ELECTRICAL PROPERTIES																					
Dielectric Constant at 1MHz	250		53483	-	3,8	3,7	2,8	2,3	7	7	2,3	-	3,2	3,2	3	2,3	-	-	-	-	-
Dielectric	243		53481	kV/mm	40	35	30	45	25	25	45	24	60	21	27	52	-	-	41	40	40
Volume Resistivity	93		53482	Ω-cm	10 15	10 14	10 13	10 15	10 12	11 12	10 15	10 13	10 16	10 16	10 13	10 17	10 17	10 15	10 14	10 14	10 14
Dissipation factor at 1Mhz	250		53483	-	0,005	0,007	-	0,0006	0,06	0,06	0,0006	0,002	0,01	0,014	0,0006	0,0002	0,003	-	0,007	-	-