

	ABS		ASA	Polyamide 12		Polycarbonate		ULTEM (PEI)	
	ABS-M30	ABS-M30i	ASA	Nylon 12	CF Nylon 12 (Onyx)	PC	PC-ISO	ULTEM 1010	ULTEM 9085
<b>Mechanical Properties</b>									
Rockwell Hardness	-	109.5	-	-	-	-	-	-	-
Tensile Modulus (XY / Z)	GPa 2.3-2.5 / 2.1-2.5	2.4 / -	2.07-2.21 / 1.8-2.2	1.41-1.59 / 1.1-1.3	1.4	2.2-2.3 / 2.0-2.2	2.0	2.9-3.1 / 2.6-3.4	2.45-2.57 / 2.26-2.56
Tensile Strength (XY / Z)	MPa 29-31 / 29-31	36 / -	32-34 / -	49-51 / 41-43	36	58-62 / no yield	57	no yield / no yield	69-71 / no yield
Elongation at break (XY / Z)	% 7-9 / 1.5-2.1	4 / -	5.1-6.7 / 1.5-2.1	30 / 6.5	-	4.8-5.6 / 1.6-2.0	4	3.6-4.4 / 0.7-1.5	4.9-5.9 / 1.4-2.4
Flexural modulus (XY / Z)	GPa 2.19-2.25 / 1.90-2.02	2.3 / -	1.92-2.02 / 1.72-1.78	1.2-1.4 / 1.1-1.3	3.6	2.11-2.19 / 1.81-1.95	2.1	2.86-2.96 / 2.5-2.7	2.37-2.43 / 2.04-2.20
Flexural strength (XY / Z)	MPa no break / 48-52	61	no break / 49-51	no break	81	no break / 70-80	90	no break / 67-93	no break / 52-68
Flexural strain at break (XY / Z)	% no break / 3.2-3.6	-	no break / 3.7-4.1	no break	-	no break / 4.1-4.9	-	no break / 2.7-3.7	no break / 3.1-4.3
Impact notched (XY / Z)	J/m 90-110 / 27-33	139	41-49 / 17-23	120-160 / 55-85	330	65-85 / 18-32	86	22-28 / 15-25	67-109 / 36-44
Impact unnotched (XY / Z)	J/m 230-350 / 70-130	283	225-345 / 70-110	1560-2040 / 190-450	-	655-865 / 160-300	53	200-320 / 40-100	580-720 / 135-229
Density	kg/m <sup>3</sup> 1.05	1.04	1.08	1.01	1.20	1.20	1.20	1.29	1.27
<b>Thermal Properties</b>									
Glass transition temperature	°C 105	108	103	35	-	140	161	210	180
Vicat softening temperature	°C -	99	-	-	-	-	139	-	-
HDT (1.80MPa / 0.45MPa)	°C 100 / 104	82 / 96	98 / 102	90-95 / 75-85	145	140 / 145	127 / 133	210 / 215	173-177
<b>Electrical Properties</b>									
Volume resistivity	Ohm*m > 6.78E12	0.6-1.5E12	> 6.9E12	> 6.9E11	-	> 6.8E12	0.8-1.5E12	> 7.0E12	> 68.9E12
Dielectric constant (2MHz)	- 2.49 / 2.61	2.7-2.9	2.82	2.5	-	2.53 / 2.69	2.8-3.0	-0.002	2.8
Dissipation factor (2MHz)	E-4 40-70	51-53	230	80-140	-	30-80	5-9	0	100
<b>Other properties</b>									
Flame, smoke and toxicity (FST)	No	No	No	No	No	No	No	No	Yes
Bio-Compatibility	No	Yes	No	No	No	No	Yes	No	No
Certifications	-	NSF 51 (food) ISO10993 USP Cl. VI	-	-	-	-	ISO10993 USP Cl. VI	-	EN-45545-2 (railway) CFR 25.853 (cabin)