

## Physical Properties of Plastics

Material	Formula	Density g cm <sup>-3</sup>	Flammability	Limiting oxygen index %	Optical transmission %	Radiation resistance	Refractive index	Resistance to Ultra- violet	Water absorption %	Water absorption - equilibrium %	Water absorption - over 24 hours %
Cellulose Acetate	CA	1.3	HB	19	-	Fair	1.49	Fair	-	-	1.9-7.0
Cellulose Acetate Butyrate	CAB	1.20	HB	17	-	Fair	1.478	Good	-	-	0.9-2.2
Ethylene- Chlorotrifluoroethylene copolymer	E-CTFE	1.68	V0	60	-	Fair	-	-	-	-	<0.02
Ethylene- Tetrafluoroethylene Copolymer	ETFE	1.7	V0	30-32	-	Fair	1.403	Excellent	0-0.03	-	-
Fluorinated Ethylene Propylene Copolymer	FEP	2.15	V0	95	-	Poor	1.344	Excellent	0.01	-	-
Polyacrylonitrile- butadiene-styrene	ABS	1.05	HB @ 1.5mm	19	-	Fair	-	Poor	-	-	0.3-0.7
Polyamide - Nylon 6	PA 6	1.13	HB	25	-	Fair	1.53	Poor	-	>8	2.7
Polyamide - Nylon 6, 6	PA 6,6	1.14	HB	23	-	Fair	1.53	Poor	-	8	2.3
Polyamide - Nylon 6, 6 - 30% Carbon Fiber Reinforced	PA 6, 6 - 30% CFR	1.28	HB	22	-	-	-	-	-	-	<0.1
Polyamide - Nylon 6, 6 - 30% Glass Fiber Reinforced	PA 6,6 30% GFR	1.4	HB	22	-	-	-	-	-	-	1-5

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Polyamide - Nylon 12	PA 12	1.02	HB-V2	21	-	Fair	-	Fair?	-	1.6	-
Polyamide/imide	PAI	1.42-1.46	V0	44-45	-	Good	-	Good	-	3-4	0.3
Polybenzimidazole	PBI	1.3	Does not burn	58	-	Good	-	-	-	-	0.4
Polybutylene terephthalate	PBT	1.31	HB	25	-	Good	-	Fair?	-	-	0.1
Polycarbonate	PC	1.2	V0-V2	25-27	-	Fair	1.584-6	Fair	-	0.35	0.1
Polycarbonate - 30% Glass Fiber Filled	PC - 30% GFR	1.43	V-1	-	-	-	-	-	0.28	0.11	-
Polycarbonate - Conductive	PC	1.28 - 1.35	-	-	-	-	-	-	-	-0.9	-
Polychlorotrifluoroethylen e	PCTFE	2.10 - 2.14	V-0	-	-	-	1.435	-	<0.01	-	-
Polyetheretherketone	PEEK	1.26 - 1.32	V-0 @ 1.5mm	35	-	Good	-	Fair	-	0.5	0.1-0.3
Polyetherimide	PEI	1.27	V-0 @ 0.4mm	47	-	Good	-	Good/Fair	-	1.3	0.25
Polyethersulfone	PES	1.37	V-0 @ 0.4mm	34-41	-	Good-Fair	1.65	Fair	-	2.2	0.4-1
Polyethylene - Carbon filled	PE	0.96	-	-	-	-	-	Good	-	-	-
Polyethylene - High density	HDPE	0.95	HB	17	-	Fair	1.54	Poor	-	-	<0.01
Polyethylene - Low Density	LDPE	0.92	HB	17	-	Fair	1.51	Poor	-	-	<0.015
Polyethylene - U.H.M.W.	UHMW PE	0.94	HB	17	-	Fair	-	Poor	-	-	<0.01
Polyethylene terephthalate	Polyester, PET, PETP	1.3-1.4	HB	21	-	Good	1.58-1.64	Fair?	-	<0.7	0.1
Polyimide	PI	1.42	V0	53	-	Good	1.66	Poor	-	-	0.2-2.9
Polymethylmethacrylate	PMMA, Acrylic	1.19	HB	17-20	-	Fair	1.49	Good	-	-	0.2

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Polymethylpentene	TPX®	0.835	HB	17	-	-	1.463	Poor	-	-	0.01
Polyoxymethylene - Copolymer	Acetal - Copolymer POMC	1.41	HB	15	-	Poor	-	Poor	-	0.6 - 0.8	0.2 - 0.25
Polyoxymethylene - Homopolymer	Acetal - Homopolymer POMH	1.42	HB	15	-	Poor	-	Poor	-	0.6 - 0.9	0.25
Polyphenyleneoxide	PPO (modified), PPE (modified)	1.06	HB	20	-	Good	-	-	-	-	0.1-0.5
Polyphenyleneoxide (modified), 30% Glass Fiber Reinforced	PPO 30% GFR	1.29	HB	26	-	-	-	-	-	-	0.06-0.33
Polyphenylenesulfide - 40% Glass Fiber Reinforced	PPS - 40% GFR	1.66	V0	46	-	Good	-	Good	-	-	<0.05
Polyphenylsulfone	PPSu	1.29	V-0	44	-	-	-	-	1.2	0.6	0.35
Polypropylene	PP	0.9	HB	18	-	Fair	1.49	Poor	-	0.03	-
Polystyrene	PS	1.05	HB	19	-	Good	1.59-1.60	Poor	-	-	<0.4
Polystyrene - Conductive	High Impact Conductive Polystyrene	1.04	-	-	-	-	-	-	-	-	-
Polystyrene - Cross-linked	PS - X - Linked	1.05	HB	-	-	Good	1.59	-	-	-	0.02-0.03
Polysulphone	PSu	1.24	HB	30	-	Good	-	Poor	0.40	0.85	-
Polytetrafluoroethylene	PTFE	2.2	V0	95	-	Poor	1.38	Excellent	-	-	0.01
Polytetrafluoroethylene filled with Glass	PTFE 25% GF	2.25	V0	95	-	-	-	Good	-	-	0.15
Polyvinylchloride - Unplasticized	UPVC	1.4	V0	42	-	Fair	1.54	Good	-	-	0.03-0.4

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Polyvinylfluoride	PVF	1.37-1.39	V0	35	-	-	1.46	Excellent	-	-	0.05
Polyvinylidenechloride	PVDC	1.63	-	60	-	Fair	-	Poor	-	-	0.1
Polyvinylidene fluoride	PVDF	1.76	V0	44	-	Fair	1.42	Excellent	-	-	0.04
Silicone Elastomer	MQ /VNQ /PMQ /P VMQ	1.1 - 1.5	-	-	-	Poor	-	-	-	-	-
Tetrafluoroethylene- perfluoro(alkoxy vinyl ether) - Copolymer	PFA. Teflon PFA.	2.15	V0	>95%	-	-	1.35	-	<0.03	-	-

All information and technical data are given as a guide only. Although every effort has been made to ensure that the information is correct, no warranty is given as to its completeness or accuracy.

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