

Datenblatt | Data sheet

Plastic materials

Material	ABS	HDPE	LDPE	PA	PC	PEEK	PK	PMMA	POM	PP	PS	PTFE	PUR	PVC	Torlon
Name	Acrylonitrile butadiene styrene	High density polyethylene	Low density Polyethylene	Polyamids	Polycarbonats	Polyether-etherketon	Polyketone	Polymethyl methacrylate	Polyoxymethyl ene	Polypropylene	Polystyrene	Polytetra-fluorethylene	Polyurethane	Polyvinyl chloride	Polyamidimid
Alternative Name(s)				Nylon®	Lexan®			Acryl Plexiglas®	Delrin®, Hostaform®			Teflon®	PU		Torlon® 4301 Torlon® 4203L
Hardness	80 - 90 Shore A	60 - 73 Shore D	40 - 55 Shore D	75 - 85 Shore D	80 - 90 Shore D	82 - 88 Shore D	75 - 85 Shore D	84 - 87 Shore D	80 - 90 Shore D	70 - 80 Shore D	78 - 82 Shore D	50 - 60 Shore D	80 - 100 Shore A	80 - 84 Shore D	80 - 85 Shore D
Density g/cm³	1,03	0,97	0,97	1,11	1,2	1,29	1,24	1,18	1,41	0,9	1,05	2,16	1,14	1,38	1,42
Moisture absorption in %	0,28	0,013	0,013	2,10	0,20	0,48	0,30	0,30	0,3	0,01	0,15	0,02	0,3	0,15	0,34
Operating temperature °C	-30 - 80	-30 - 70	-30 - 70	-30 - 80	-40 - 120	-50 - 250	-40 - 120	-40 - 90	-40 - 85	-30 - 110	-10 - 90	-269 - 250	-40 - 80	-15 - 70	-196 - 200
Break load in traction MPa	30 - 70	20 - 32	9 - 20	86 - 103	60 - 110	120 - 250	80 - 110	80 - 120	30 - 120	40 - 50	50 - 90	7 - 30	70 - 140	55 - 90	22 - 32
Available with															
Diameter (mm)	1,5 - 100	1,5 - 150	1,5 - 100	1,5 - 160	1,5 - 100	1,5 - 100	1,5 - 100	1,5 - 100	1 - 160	1,5 - 160	1,5 - 100	1,5 - 160	1,5 - 100	1,5 - 100	1,5 - 100
Diameter (in)	1/16 - 4	1/16 - 4	1/16 - 4	1/16 - 6 5/16	1/16 - 4	1/16 - 4	1/16 - 4	1/16 - 4	3/64 - 6 5/16	1/16 - 6 5/16	1/16 - 4	1/16 - 6 5/16	1/16 - 4	1/16 - 4	1/16 - 4
Precision grade	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV	G I - IV
Description	High dimensional stability, hardness, rigidity, abrasion and impact resistance.	Good abrasion and impact resistance. Excellent corrosion and radiation resistance, electrical insulator.	Good abrasion and impact resistance. Excellent corrosion and radiation resistance, electrical insulator.	High corrosion, wear and abrasion resistance. Also suitable for high temperature applications. Good electrical insulator, self-lubricating.	Good hardness, impact resistance and dimensional stability. Satisfactory corrosion, wear and weather resistance. Can be used in a wide range of temperatures	Good mechanical properties, dimensional stability and excellent wear, abrasion and corrosion resistance.	Good mechanical properties, excellent wear and abrasion resistance, good corrosion resistance, high elasticity and good dimensional stability.	Good hardness, transparency and resistance to abrasion and atmospheric phenomena. Satisfactory mechanical properties, impact and corrosion resistance.	Good mechanical properties, good corrosion, wear and abrasion resistance. Good electrical insulating properties, self-lubricating.	Good mechanical properties and corrosion, fatigue and impact resistance. Heat resistant, excellent electrical insulator. Float on water	Good hardness and rigidity. Fragile material with satisfactory corrosion resistance. Unstable to UV rays.	Excellent corrosion resistance. Especially suitable for high temperature applications. Good electrical insulator, self-lubricating.	Similar characteristics to rubber, but higher abrasion and wear resistance.	Good hardness and stiffness, dimensional stability, radiation resistance, satisfactory corrosion resistance. Moderate shock resistance.	Very good mechanical properties, highest values for stiffness / toughness for plastics. Suitable for use at high temperatures. Very good resistance to creep strain.

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Material	ABS	HDPE	LDPE	PA	PC	PEEK	PK	PMMA	POM	PP	PS	PTFE	PUR	PVC	Torlon
Field of application	Special pumps and valves, automotive and electronics industry, toys.	Anti-evaporation and anti-odor devices. Suitable for floating applications. Used in electronic, pharmaceutical and medical industries.	Anti-evaporation and anti-odor devices. Suitable for floating applications. Used in electronic, pharmaceutical and medical industries.	Special valves, low load bearings, medical and industrial applications.	Special applications where good impact resistance is required; medical applications, decoration, musical instruments.	Bearings, special pumps and valves, components for chemical, electronic and mechanical industry, for which high mechanical properties and corrosion resistance are required.	Special bearings and pumps in the automotive, aerospace, chemical, electronic and petro-chemical industries.	Safety valves, level indicators, laboratory equipment, game balls. Cost-effective alternative to polycarbonate or as an alternative to heavier glass.	Light duty safety valves, low load bearings, special pumps and valves, medical instruments. Food, chemical, electronics and pharmaceutical industries.	Special valves, low load bearings, check and float valves.	Floats in non-aqueous liquids, use in the electronic and medical sectors and for decorative purposes.	Ball bearings, special valves (extremely corrosive environments), measuring instruments, medical and household instruments. Food, chemical, electronic and pharmaceutical industries.	Special bearings, safety valves. Used in the food industry. Screen Cleaning (with metal core, for removing surface contamination).	Valves for galvanic and petrochemical industry, sealing valves, valves for industrial equipment.	Special bearings for oil-free operation at high temperatures for which high wear resistance is required, automotive component manufacturing, aerospace, electronic, marine and sporting goods industries.
Resistant to	Water, sea water, dilute acids, alkali, inorganic salts, saturated hydro-carbons, gasoline, mineral oils, animal and vegetable fats.	Acids, alcohols, bases, gasoline, greases and oils. Moderate resistance to aliphatic and aromatic hydro-carbons, mineral oils, oxidizing agents.	Acids, alcohols, bases, gasoline, greases and oils. Moderate resistance to aliphatic and aromatic hydro-carbons, mineral oils, oxidizing agents.	Alkalis, gasoline, greases, inorganic salt solutions, weak alcohols, motor oil, methanol, ketones, esters.	Contact with dilute acids, alcohol, vegetable and mineral oils. Unstable in contact with strong acids and bases, esters.	Contact with most solutions (organic compounds, salts, oils), with warm water and hot steam, high temperatures and gamma rays.	Contact with aliphatic hydro-carbons, lubricants, oils, greases, petroleum products, salt solutions	Good strength in contact with aqueous solutions, dilute inorganic acids, aliphatic hydro-carbons, ammonia, alkalis, oils and greases.	Basic, neutral and average acidic substances. Sea water, gasoline, mineral oils and greases, inorganic salt solutions, weak alcohols and ethers.	Non-concentrated acids, alkalis, alcohol, oils, greases	Good strength in contact with dilute acids and bases, aqueous solutions, detergents. Satisfactory in contact with oxidizing agents, oils and greases.	Industrial acids or caustics	Good corrosion resistance in dilute acids and alkalis, mineral oils, greases and petroleum products.	Contact with dilute acids, alkalis, inorganic compounds, greases and mineral oils.	Aliphatic and aromatic, chlorinated and fluorinated hydro-carbons, most acids at moderate temperatures and automotive and aerospace lubricants
Unresistant to	Low resistance in contact with strong acids, aliphatic, aromatic and chlorinated hydro-carbons, aldehydes, ketones and esters.	Halogenated hydrocarbons	Halogenated hydrocarbons	Strong acids and bases	Strong acids and bases, esters, organic solutions, hydro-carbons, ketones, oils and fats, oxidizing agents.	Strong acids (concentrated nitric acid, sulfuric acid) as well as halogens and some aromatic hydro-carbons, UV exposure.	High temperatures	Contact with aromatic hydro-carbons, halogens, ketones and esters, organic acids, ethanol and methanol	Strong acids, mineral acids, chlorides and alkalis.	In contact with halogens (weak strength in aromatic hydro-carbons)	Contact with aromatic hydro-carbons, halogenated aldehydes, ketones, esters and ethers.	Dissolved alkali metals and fluorides (at high temperatures).	Strong acids and bases, unstable material in contact with warm water, warm or humid air, water vapor, aromatic hydro-carbons, polar organic substances	Resistant to solutions, aromatic and halogenated hydro-carbons, ketones, cyclic ethers and aldehydes, especially under load.	Saturated vapors, strong bases and acids with high temperatures

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