



**High
Performance
Polymer™**

ENGINEERED POLYMER SOLUTIONS

Polycarbonate (PC) Fastener Data Sheet

High Performance Polymer LTD

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Polycarbonate (PC) Fastener Properties:

Mechanical Properties	Unit	ASTM Method	Value
Tensile Strength	MPa	D638	62
Tensile Elongation	%	D638	110.0
Bending Strength	MPa	D790	88.2
Bend Elastic Constant	GPa	D790	2.30
Izod Impact Strength	J/m	D256	880
Rockwell Hardness	M Scale	D785	R120

Torsional Rupture Torque (N*m)										
Metric size (M)	M1.7	M2	M2.6	M3	M4	M5	M6	M8	M10	M12
Standard Head Types	0.022	0.055	0.12	0.18	0.39	0.8	1.20	3.20	6.38	10.35
Low Head (Hex)										
Low Head (Torx)										
Ultra Low Head (Torx)										

*Numerical Values are calculated using mean average.

*The recommended fastening torque for each screw type is 50% of the Torsional Rupture Torque value shown in the table.

Tensile Rupture Force (N)										
Metric size (M)	M1.7	M2	M2.6	M3	M4	M5	M6	M8	M10	M12
Standard Head Types	51	107	196	266	481	797	1136	2088	3363	4953
Low Head (Hex)										
Low Head (Torx)										
Ultra Low Head (Torx)										

Thermal Properties	Unit	ASTM Method	Value
Deflection under load Temperature (1.82MPa)	°C	D648	135.0
Continuous use Temperature	°C	UL746B	115.0
Combustibility		UL94	V-2

Electrical Properties	Unit	ASTM Method	Value
Volume Resistance	$\Omega \cdot \text{cm}$	D257	4.0×10^{16}
Insulation Breakdown strength		D149	17KV/mm
Arc Resistance	Sec	D495	120
Permittivity (106Hz)		D150	2.9
Dielectric tangent (106Hz)		D150	0.0090

Physical Properties	Unit	ASTM Method	Value
Specific Gravity	-	D792	1.20
Water Absorption Rate (23 °C x 24Hr)	%	D570	0.150

Polycarbonate (PC) Chemical Resistance Data:

Acid	Resistance
Hydrochloric acid 10%	○
Sulphuric acid 10%	○
Sulfuric acid 50%	X
Nitric acid 10%	○
Nitric acid 50%	X
Hydrofluoric acid 10%	○
Hydrofluoric acid 50%	Conditional
Phosphoric acid	○
Formic acid	○
Acetic acid	○
Citric acid	○
Chromic acid	Conditional
Boric acid	○

Alcohol	Resistance
Methanol	Conditional
Butanol	○
Glycol	○

Aldehyde and Ketone	Resistance
Acetaldehyde	X
Acetone	X
Formalin	-
Methyl ethyl ketone	X

Base – Alkali	Resistance
Ammonia	X
Sodium hydroxide 10%	X
Calcium hydroxide	○

Halogenated organics	Resistance
Carbon tetrachloride	-
Perchloro ethylene	-
Freon 12	-

Hydrocarbon	Resistance
Benzene	X
Toluene	X
Xylene	X
Cyclohexane	○
Naphthalene	-

Inorganic chemicals	Resistance
Water	○
Hydrogen sulphide (gas)	○
Sulphur dioxide	○
Sodium chloride	-
Ammonium nitrate	○
Sodium nitrate	○
Sodium acetate	-
Calcium carbonate	X
Calcium chloride	○
Magnesium chloride	○
Magnesium sulphate	○
Zinc sulphate	○
Hydrogen peroxide	○

Other Chemicals	Resistance
Urea	○
Detergent	○

- : Can be used
 X : Cannot be used
 - : No data

* Chemical test data shown conducted at room temperature (23°C) *

* Chemical resistance changes in line with operating environment, ensure to test under actual use environment beforehand. *

Storage conditions

- Avoid direct sunlight and store at room temperature
- Keep fasteners in the original plastic bag to avoid dust.
- Please store in a sealed container if removed from zip lock bag.
- Do not place heavy objects on fasteners to avoid damage