High Performance Polymer™

ENGINEERED POLYMER SOLUTIONS

Polytetrafluoroethylene (PTFE) Fastener Data Sheet

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Polytetrafluoroethylene (PTFE) Fastener Properties:

Mechanical Properties	Unit	ASTM Method	Value
Tensile Strength	MPa	D638	24
Tensile Elongation	%	D638	200-400
Bending Strength	MPa	D790	-
Bend Elastic Constant	GPa	D790	0.56
Izod Impact Strength	J/m	D256	160
Rockwell Hardness	M Scale	D785	-

Torsional Rupture Torque (N*m)							
Metric size (M)	M3	M4	M5	M6	M8	M10	M12
Standard Head Types	0.02	0.03	0.08	0.14	0.24	0.69	1.54

*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)	M3	M4	M5	M6	M8	M10	M12
Standard Head Types	61	104	161	240	418	654	835

Thermal Properties	Unit	ASTM Method	Value
Deflection under load Temperature (1.82MPa)	°C	D648	-
Continuous use Temperature	°C	UL746B	260
Combustibility		UL94	V-0

Electrical Properties	Unit	ASTM Method	Value
Volume Resistance	Ω*cm	D257	$> 10^{18}$
Insulation Breakdown strength		D149	19.2KV/mm
Arc Resistance	Sec	D495	>300
Permittivity (106Hz)		D150	< 2.1
Dielectric tangent (106Hz)		D150	0.0002

Physical Properties	Unit	ASTM Method	Value
Specific Gravity	-	D792	2.14-2.20
Water Absorption Rate (23 °C x 24Hr)	%	D570	0.010

Polytetrafluoroethylene (PTFE) Chemical Resistance Data:

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

Alcohol	Resistance
Methanol	○
Butanol	-
Glycol	○

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

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

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

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

Inorganic chemicals	Resistance
Water	○
Hydrogen sulphide (gas)	○
Sulphur dioxide	○
Sodium chloride	○
Ammonium nitrate	○
Sodium nitrate	○
Sodium acetate	○
Calcium carbonate	○
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.

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