



**High  
Performance  
Polymer™**

**ENGINEERED POLYMER SOLUTIONS**

## **Polyphenylene Sulphide (PPS) Fastener Data Sheet**

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## Polyphenylene Sulphide (PPS) Fastener Properties:

Mechanical Properties	Unit	ASTM Method	Value
Tensile Strength	MPa	D638	185
Tensile Elongation	%	D638	1.9
Bending Strength	MPa	D790	255.0
Bend Elastic Constant	GPa	D790	13.20
Izod Impact Strength	J/m	D256	100
Rockwell Hardness	M Scale	D785	M100

Torsional Rupture Torque (N*m)										
Metric size (M)	M1.7	M2	M2.6	M3	M4	M5	M6	M8	M10	M12
Standard Head Types	-	0.084	0.19	0.29	0.69	1.23	2.05	548	8.87	13.70
Low Head (Hexagon)				0.17	0.63	1.00	1.74			
Low Head (Hexa)				0.28	0.71	1.40	1.86			
Special Low Head (Hexa)				0.21	0.37	0.74	1.13			

\*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	-	217	427	558	966	1548	2028	3701	5438	6805
Low Head (Hexagon)				533	898	1568	1891			
Low Head (Hexa)				566	918	1584	2011			
Special Low Head (Hexa)				396	611	911	1177			

Thermal Properties	Unit	ASTM Method	Value
Deflection under load Temperature (1.82MPa)	°C	D648	260.0
Continuous use Temperature	°C	UL746B	200.0
Combustibility		UL94	V-0

Electrical Properties	Unit	ASTM Method	Value
Volume Resistance	$\Omega \cdot \text{cm}$	D257	$1.0 \times 10^{16}$
Insulation Breakdown strength		D149	15KV/mm
Arc Resistance	Sec	D495	120
Permittivity (106Hz)		D150	4.6
Dielectric tangent (106Hz)		D150	0.0020

Physical Properties	Unit	ASTM Method	Value
Specific Gravity	-	D792	1.66
Water Absorption Rate (23 °C x 24Hr)	%	D570	0.015

## Polyphenylene Sulphide (PPS) 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%	Conditional
Hydrofluoric acid 50%	X
Phosphoric acid	Conditional
Formic acid	○
Acetic acid	○
Citric acid	○
Chromic acid	Conditional
Boric acid	○

Alcohol	Resistance
Methanol	○
Butanol	-
Glycol	○

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

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

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	Conditional
Sodium chloride	-
Ammonium nitrate	○
Sodium nitrate	○
Sodium acetate	-
Calcium carbonate	○
Calcium chloride	○
Magnesium chloride	○
Magnesium sulphate	○
Zinc sulphate	○
Hydrogen peroxide	Conditional

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