



**High
Performance
Polymer™**

ENGINEERED POLYMER SOLUTIONS

**RENY (50% Glass-Fiber Reinforced Polyamide
MXD6) Fastener Data Sheet**

High Performance Polymer LTD
Sales@highperformancepolymer.com

RENY Fastener Properties:

Mechanical Properties	Unit	ASTM Method	Value
Tensile Strength	MPa	D638	285
Tensile Modulus of Elasticity	GPa	D638	19.6
Tensile Elongation	%	D638	2.1
Bending Strength	MPa	D790	380.0
Bend Elastic Constant	GPa	D790	17.40
Bending Modulus of Elasticity	GPa	D790	17.4
Izod Impact Strength	J/m	D256	110
Rockwell Hardness	M Scale	D785	M111

Torsional Rupture Torque (N*m)											
Metric size (M)	M1.7	M2	M2.6	M3	M4	M5	M6	M8	M10	M12	M16
Standard Head Types	0.0041	0.101	0.220	0.36	0.85	1.65	2.74	6.22	11.39	15.93	38.90
Low Head (Hex)				0.20	0.74	1.08	2.26				
Low Head (Torx)				0.35	0.84	1.38	2.19				
Ultra Low Head (Torx)				0.25	0.53	0.95	1.27				

*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	M16
Standard Head Types	98	350	611	853	1499	2407	3106	5335	7646	7511	19987
Low Head (Hex)				799	1286	1976	2767				
Low Head (Torx)				884	1340	2102	2651				
Ultra Low Head (Torx)				596	1004	1543	1654				

Thermal Properties	Unit	ASTM Method	Value
Deflection under load Temperature (1.82MPa)	°C	D648	234.0
Continuous use Temperature	°C	UL746B	105
Combustibility		UL94	HB
Linear expansion Coefficient	10-5/°C	D696	1.1
Thermal Conductivity	W/(m*K)	C177	0.55

Electrical Properties	Unit	ASTM Method	Value
Volume Resistance	Ω^*cm	D257	1.3×10^{16}
Insulation Breakdown strength		D149	32.2KV/mm
Arc Resistance	Sec	D495	129
Permittivity (106Hz)		D150	4.0
Dielectric tangent (106Hz)		D150	9×10^{-3}
Dielectric breakdown voltage	kV/mm	D149	32.2
Permittivity(1KHz)	-	D150	4.2
Permittivity(1MHz)	-	D150	4.0
Dissipation factor(1KHz)	-	D150	0.009
Dissipation factor(1MHz)	-	D150	0.009
Arc resistance	Secs.	D495	129

Physical Properties	Unit	ASTM Method	Value
Specific Gravity	-	D792	1.65
Water Absorption Rate (23 °C x 24Hr)	%	D570	0.140

RENY Chemical Resistance Data:

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

Alcohol	Resistance
Methanol	-
Butanol	-
Glycol	-

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

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

○ : 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. *

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	X

Other Chemicals	Resistance
Urea	X
Detergent	○

Storage conditions

- Avoid direct sunlight and store at room temperature
- Keep fasteners in the original zip lock 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.