



**High
Performance
Polymer™**

ENGINEERED POLYMER SOLUTIONS

PFA (Perfluoro alkoxyalkane) Fastener Data Sheet

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PFA Fastener Properties:

| Mechanical Properties | Unit | ASTM Method | Value |
|-----------------------|---------|-------------|-------|
| Tensile Strength | MPa | D638 | 28 |
| Tensile Elongation | % | D638 | 88.0 |
| Bending Strength | MPa | D790 | - |
| Bend Elastic Constant | GPa | D790 | 0.48 |
| Izod Impact Strength | J/m | D256 | - |
| Rockwell Hardness | M Scale | D785 | - |

| Torsional Rupture Torque (N*m) | | | | | | | | | | | |
|--------------------------------|------|----|------|----|------|------|------|------|-----|-----|-----|
| Metric size (M) | M1.7 | M2 | M2.6 | M3 | M4 | M5 | M6 | M8 | M10 | M12 | M16 |
| Standard Head Types | | | | | 0.06 | 0.10 | 0.20 | 0.44 | | | |

*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 | | | | | 118 | 191 | 267 | 494 | | | |

| 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 | $\Omega \cdot \text{cm}$ | D257 | $> 10^{18}$ |
| Insulation Breakdown strength | | D149 | 20KV/mm |
| Arc Resistance | Sec | D495 | >300 |
| Permittivity (106Hz) | | D150 | >2.1 |
| Dielectric tangent (106Hz) | | D150 | 0.0003 |

| Physical Properties | Unit | ASTM Method | Value |
|--------------------------------------|------|-------------|-------|
| Specific Gravity | - | D792 | 2.15 |
| Water Absorption Rate (23 °C x 24Hr) | % | D570 | 0.010 |

PFA 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 | ○ |

○ : 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

| 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 | - |
| Detergent | - |

- 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.