

# Torlon® 4435 / Bearing Grade Polyamide/imide Rod

**Grade:** Torlon® 4435 / Bearing Grade

**Formula:** PAI

**Diameter:** 12.7mm

**Length:** 500mm

**UOM Code:** 042-745-24

**SKU:** 1000005884-group

**Product Code:** AM31-RD-000181

## Material Properties for Polymers

### Chemical Resistance

Element	Value
Acids - concentrated	Fair-Poor
Acids - dilute	Fair
Alcohols	Good-Poor
Alkalis	Poor
Aromatic hydrocarbons	Good
Greases and Oils	Good
Halogenated Hydrocarbons	Good-Poor
Halogens	Good-Poor
Ketones	Good

### Electrical Properties

Element	Value
Dielectric constant @ 1MHz	3.9-5.4
Dissipation factor @ 1MHz	0.03-0.042
Dielectric strength( kV mm <sup>21</sup> )	23at 1mm
Surface resistivity( Ohm/sq )	8-50 x 10 <sup>1?</sup>
Volume resistivity( Ohmcm )	0.08-2 x 10 <sup>1?</sup>

### Physical Properties

Element	Value
Flammability	V0

<b>Element</b>	<b>Value</b>
Radiation resistance	Good
Resistance to Ultra-violet	Good
Limiting oxygen index( % )	44-45
Water absorption - equilibrium( % )	0.3-0.4
Water absorption - over 24 hours( % )	0.3
Density( gcm <sup>3</sup> )	1.42-1.46

## **Mechanical Properties**

<b>Element</b>	<b>Value</b>
Hardness - Rockwell	E72-86
Poisson's ratio	0.38
Elongation at break( % )	7-15
Tensile modulus( GPa )	4.5-6.8
Izod impact strength( J m <sup>-1</sup> )	60-140- notched
Tensile strength( MPa )	110-190

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Heat-deflection temperature - 1.8MPa( C )	278-9
Lower working temperature( C )	-200
Upper working temperature( C )	200-260
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	1000
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	0.26-0.54@23°C
Coefficient of thermal expansion( x10 <sup>-4</sup> K <sup>-1</sup> )	25-31

## **Pultrusions**

<b>Element</b>	<b>Value</b>
Compressive strength( MPa )	170-220