# Torlon® 4203L / Electrical Grade Polyamide/imide Rod

**Grade:** Torlon® 4203L / Electrical Grade
**Formula:** PAI
**Diameter:** 25.4mm
**Length:** 500mm
**Colour:** Brown
**UOM Code:** 132-650-95
**SKU:** 1000027581
**Product Code:** AM31-RD-000190

## 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?¹ ) | 23at 1mm |
| Surface resistivity( Ohm/sq ) | 8-50 x 10¹? |
| Volume resistivity( Ohmcm ) | 0.08-2 x 10¹? |

## Physical Properties

| Element | Value |
|---|---|
| Flammability | V0 |
| Radiation resistance | Good |
| Resistance to Ultra-violet | Good |
| Limiting oxygen index( % ) | 44-45 |
| Water absorption - equilibrium( % ) | 03-Apr |
| Water absorption - over 24 hours( % ) | 0.3 |
| Density( gcm?³ ) | 1.42-1.46 |

## Mechanical Properties

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

## Thermal Properties

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

## Pultrusions

| Element | Value |
|---|---|
| Compressive strength( MPa ) | 170-220 |