

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

**Grade:** Torlon® 4203L / Electrical Grade

**Formula:** PAI

**Diameter:** 6.7mm

**Length:** 500mm

**Colour:** Brown

**UOM Code:** 190-011-24

**SKU:** 1000027486

**Product Code:** AM31-RD-000140

## 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        |
| 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 <sup>3</sup> )           | 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 <sup>-1</sup> ) | 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 <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>-6</sup> K <sup>-1</sup> ) | 25-31          |

## Pultrusions

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