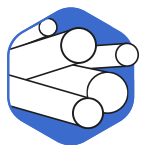


**Goodfellow**

innovation, delivered



Polymer



Rod

## Polyacrylonitrile-butadiene-styrene Rod 10mm dia natural

**ABS**

Product Code: AB30-RD-000110

Diameter: 10mm

Colour: Natural

Length: 10mm - 500mm

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## Polyacrylonitrile-butadiene-styrene

Acrylonitrile butadiene styrene. ABS is amorphous and therefore has no true melting point. ABS is a terpolymer made by polymerizing styrene and acrylonitrile in the presence of polybutadiene.

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## Material Properties for Polyacrylonitrile-butadiene-styrene

## Chemical Resistance

Acids - concentrated: **Good-Poor**

Acids - dilute: **Good**

Alcohols: **Good-Poor**

Alkalis: **Good**

Aromatic hydrocarbons: **Poor**

Greases and Oils: **Good**

Halogenated Hydrocarbons: **Poor**

Halogens: **Poor**

Ketones: **Poor**

## Electrical Properties

Dielectric constant @1MHz: **3 - 3**

Dielectric strength ( kV mm<sup>-1</sup> ): **20.0 - 25.0**

Dissipation factor @ 1MHz: **0.0200**

Volume resistivity ( Ohmcm ): **>10<sup>15</sup>**

## Mechanical Properties

Coefficient of friction: **0.50**

Elongation at break ( % ): **45.0**

Hardness - Rockwell: **R100-110**

Izod impact strength ( J m<sup>-1</sup> ): **200.0 - 400.0**

Poisson's ratio: **0.350**

Tensile modulus ( GPa ): **2.10 - 2.40**

Tensile strength ( MPa ): **41.00 - 45.00**

## Physical Properties

Density ( g cm<sup>-3</sup> ): **1.050**

Flammability: **HB@1.5mm**

Limiting oxygen index ( % ): **19**

Radiation resistance: **Fair**

Resistance to Ultra-violet: **Poor**

Water absorption - over 24 hours ( % ): **0.300 - 0.700**

## Thermal Properties

Coefficient of thermal expansion ( $\times 10^{-6} \text{ K}^{-1}$ ): **80.000**

Heat-deflection temperature - 0.45MPa ( C ): **98**

Heat-deflection temperature - 1.8MPa ( C ): **89.0**

Thermal conductivity ( $\text{W m}^{-1} \text{ K}^{-1}$ ): **0.17 @23°C**

Upper working temperature ( C ): **70 - 100**

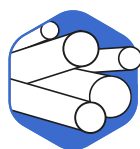
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## Related Product Data

### Form

#### Rod

A straight length of circular section material.



#### Tolerances

Diameter:

Diameter:  $\leq 10\text{mm}$   $\pm 10\%$

Diameter:  $> 10\text{mm}$   $\pm 5\%$

#### Length (Round)

Length:  $< 100\text{mm}$   $\pm 1\text{mm}$

Length:  $\geq 100\text{mm}$   $+5\% / -1\%$

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## Material

### ABS - Acrylonitrile Butadiene Styrene

Acrylonitrile butadiene styrene. ABS is amorphous and therefore has no true melting point. ABS is a terpolymer made by polymerizing styrene and acrylonitrile in the presence of polybutadiene.

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## Type

### Polymer

A carbon based material which is built up from a series of smaller units (monomers). The choice of the monomers and the final molecular weight (i.e. size) of the polymer govern the mechanical and physical properties of the resultant



polymer.