

# 34-700 Carbon Fiber

**Grade:** 34-700

**Formula:** C

**Size:** Unsized

**Length:** 100m

**Filament Diameter:** 0.007mm

**Number Of Filaments:** 12000

**Tex Number:** 795

**CAS Number:** 7440-44-0

**UOM Code:** 083-110-92

**SKU:** 1000011963-group

**Product Code:** C-00-FB-000122

## Material Properties for Metals

### Atomic Properties

Element	Value
Atomic number	6
Crystal structure	Hexagonal/Diamond
Electronic structure	He 2s <sup>2</sup> 2p <sup>2</sup>
Valences shown	2, 3, 4
Atomic weight( amu )	12.011
Thermal neutron absorption cross-section( Barns )	0.0034
Photo-electric work function( eV )	4.8
Natural isotope distribution( Mass No./% )	12/ 98.89
Natural isotope distribution( Mass No./% )	13/ 1.11
Atomic radius - Goldschmidt( nm )	0.077
Ionisation potential( No./eV )	6/ 490
Ionisation potential( No./eV )	4/ 64.5
Ionisation potential( No./eV )	1/ 11.26
Ionisation potential( No./eV )	3/ 47.9
Ionisation potential( No./eV )	2/ 24.38
Ionisation potential( No./eV )	5/ 392

### Mechanical Properties

<b>Element</b>	<b>Value</b>
Hardness - Mohs	0.5-1
Hardness - Mohs	10
Material condition	Diamond
Material condition	Graphite
Bulk modulus( GPa )	33
Bulk modulus( GPa )	542
Tensile modulus( GPa )	4.8

## **Electrical Properties**

<b>Element</b>	<b>Value</b>
Electrical resistivity( $\mu\text{Ohmcm}$ )	1375@0@0°C
Thermal emf against Pt (cold 0C - hot 100C)( mV )	0.7

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Boiling point( C )	5000
Density( $\text{gcm}^3$ )	2.25@20°C

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Melting point( C )	3650
Specific heat( $\text{J K}^{-1} \text{kg}^{-1}$ )	712@25°C
Thermal conductivity( $\text{W m}^{-1} \text{K}^{-1}$ )	80-240@0-100°C
Coefficient of thermal expansion( $\times 10^{-6} \text{K}^{-1}$ )	0.6-4.3@0-100°C