Material Properties Chart

This chart represents the various physical properties of our nylons. These nylons are manufactured through anionic polymerisation and are all Polyamide 6 with various fillers as listed. This data should not be used as design data without the appropriate addition of safety factoring and suitable specific application testing.

Conditioned material refers to nylon that has been allowed to saturate itself with air moisture at 23 degrees C at 50% RH (Relative Humidity).


**THERMAL PROPERTIES:**

- **Melting Temperature**
  - Celsius: 220 - 225
  - 200 - 225

- **Thermal Conductivity @ 23 C**
  - W/(K.m)
  - 0.29

- **Coefficient of linear thermal expansion**
  - at saturation immersed in water at 23 deg. C
  - mm/m.deg
  - 69 x 10^-6
  - 155 x 10^-6

- **Temperature of deflection under load**
  - Unconditioned
  - Celsius: 80
  - 80

- **Heat deflection temperature at 0.5% deflection**
  - Celsius: 170
  - 190

- **Max. allowable service temperature**
  - in air: - for short periods (few minutes)
  - under load
  - Celsius: 170
  - 190

- **Temperature of deflection under load**
  - Unconditioned
  - Celsius: 105
  - 105

**MECHANICAL PROPERTIES:**

- **Compressive strength at 5% yield**
  - HB: 75
  - HB

- **Elongation at break**
  - Calculated: 7 - 9% at 5% strain in 1000 hours (unconditioned)

- **Creep test in tension**
  - Stress to produce 1% strain in 1000 hours (unconditioned)
  - ISO 989
  - N/square mm
  - 22

- **Densification under load**
  - HB: 75

**ELECTRICAL PROPERTIES:**

- **Volume Resistivity (conditioned)**
  - Ohm.cm: >10 x 10^13

- **Dielectric strength (conditioned)**
  - kV/square mm: >50

- **Surface resistivity (conditioned)**
  - Ohms: >5 x 10^13

- **Relative Permittivity, Sigma r: at 100 Hz (conditioned)**
  - 6.6

- **Sigma r: at 1 MHz (conditioned)**
  - 6.6

- **Resistance to tracking**
  - ISO 112
  - CTI - 600

Manufacturers of standard and specialty grades of engineering nylons.

This chart is a comprehensive collection of data supplied to us by our principal suppliers as well as from our own and independent tests conducted on our materials.