



AN EOS COMPANY



# HT-23

## PEKK

The HT-23 is based on a PEKK resin with 23% Carbon Fiber compounded in and ground to a fine powder.

### HIGHLIGHTS

- Isotropic properties
- Melt compounded Carbon Fiber filled PEKK
- High melt point and inherently flame retardant
- Chemical resistant
- Certified to pass the FAR 25.853 60 second vertical burn requirement

### APPLICATIONS

- Aerospace
- Mobility industry
- Complex geometries requiring accuracy and feature resolution
- Well suited to applications which require superior thermal properties, with maximum performance and consistent properties in XY&Z dimensions



### HEADQUARTERS

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| TYPICAL PHYSICAL PROPERTIES                           |                   |                               |  |
|---|-------------------|-------------------------------|--|
| PROPERTY  | TEST METHOD       | IMPERIAL                      | METRIC                                     |
| Color/Appearance                                      | Visual            | Dark Grey                     | Dark Grey                                  |
| Bulk Density  | ASTM D1895        | 0.018 lb./in <sup>3</sup>     | 0.5 g/cm <sup>3</sup>                      |
| Average Particle Size (D50)                           | Laser Diffraction | 0.003 inches                  | 80 microns                                 |
| Particle Size Range (D10-D90)                         | Laser Diffraction | 0.002 - 0.005 inches          | 45 - 115 microns                           |
| Sintered Part Density                                 | ASTM D792         | 0.050 lb./in <sup>3</sup>     | 1.39 g/cm <sup>3</sup>                     |
| Elongation at Break                                   | ASTM D638         | 1.16% XY / 1.06% ZX           | 1.16% XY / 1.06% ZX                        |
| Flexural Strength                                     | ASTM D790         | 14,649 psi / 11,748 psi       | 101 MPa / 81 MPa                           |
| Flexural Modulus                                      | ASTM D790         | 865.88 kpsi / 744.04 kpsi     | 5.97 GPa / 5.13 GPa                        |
| Tensile Modulus X                                     | ASTM D638         | 942.75 kpsi                   | 6.50 GPa                                   |
| Tensile Modulus Y                                     | ASTM D638         | 928.24 kpsi                   | 6.40 GPa                                   |
| Tensile Modulus Z                                     | ASTM D638         | 841.22 kpsi                   | 5.80 GPa                                   |
| Ultimate Tensile Strength                             | ASTM D638         | 10,298 psi / 8,557 psi        | 71 MPa / 59 MPa                            |
| Tensile Strength X                                    | ASTM D638         | 11,603 psi                    | 80 MPa                                     |
| Tensile Strength Y                                    | ASTM D638         | 11,167 psi                    | 77 MPa                                     |
| Tensile Strength Z                                    | ASTM D638         | 8,847 psi                     | 61 MPa                                     |
| Strain at Break X                                     | ASTM D638         | 1.3%                          | 1.3%                                       |
| Strain at Break Y                                     | ASTM D638         | 1.3%                          | 1.3%                                       |
| Strain at Break Z                                     | ASTM D638         | 1.1%                          | 1.1%                                       |
| IZOD Impact Strength (Unnotched)                      | ASTM D256         | 1.50 ft.lb/in / 1.89 ft.lb/in | 80 J/m / 101 J/m                           |
| IZOD Impact Strength (Notched)                        | ASTM D256         | 0.37 ft.lb/in / 0.34 ft.lb/in | 20 J/m / 18 J/m                            |
| Volume Resistivity (23C, 50%RH, 500V)<br>(X / Y / Z)  | ASTM D257         | –                             | 1.28E+14 / 3.83E+14<br>/ 2.08E+14 Ω-cm     |
| Surface Resistivity (23C, 50%RH, 500V)<br>(X / Y / Z) | ASTM D257         | –                             | 1.46E+14 / 5.38E+11<br>/ 1.68E+15 Ω/square |
| Melting Point   | ASTM D3418        | 575°F                         | 302°C                                      |
| Melt Flow Rate (5min, 2.16kg, 350°C)                  | ASTM D1238        | 0.71 oz / 10 min              | 20 grams / 10 min                          |
| Heat Deflection Temp @ 0.45 MPa                       | ASTM D648         | 527°F / 525.2°F               | 275°C / 274°C                              |
| Heat Deflection Temp @ 1.82 MPa                       | ASTM D648         | 413.6°F / 395°F               | 212°C / 202°C                              |

The material properties provided herein are for reference purposes only. Actual values may vary significantly as they are dramatically affected by part geometry and process parameters. Material specifications are subject to change without notice.