



Cesic® Material Properties

03/2019

Type: HB-Cesic®

HB-Cesic® is a carbon fiber reinforced Silicon carbide composite material with excellent properties for light-weight mirrors and thermally stable structures.

| Mechanical Properties | | | | |
|------------------------------------|-------------|----------------------------|--|--|
| Density | 2.96 | g/cm³ | | |
| Strength | 320 | MPa | | |
| Weibull | 16 | | | |
| Young's modulus | 350 | GPa | | |
| Fracture toughness K _{IC} | 3.7 | MPa m^{1/2} | | |
| Poisson's ratio | 0.18 | | | |
| Hardness | 2382 | HV 1/20 | | |

| Thermal Properties | | | | |
|----------------------------------|-------------|----------------------------|----------------|--|
| Coefficient of thermal expansion | 2.3 | 10⁻⁶ / K | | |
| Thermal conductivity | | | | |
| | 293 K | 200 | W/(m K) | |
| | 200 K | 327 | W/(m K) | |
| | 150 K | 355 | W/(m K) | |
| | 52 K | 184 | W/(m K) | |
| Specific heat capacity | 0.71 | kJ/(kg K) | | |
| Outgassing | 0.00 | % RML | | |
| | 0.01 | % TML | | |

| Electrical Properties | | | | |
|----------------------------------|---------------|----------------------------|--|--|
| Specific electrical resistance | 3.48 | 10⁻⁵ Ω m | | |
| Specific electrical conductivity | 28.735 | S / m | | |