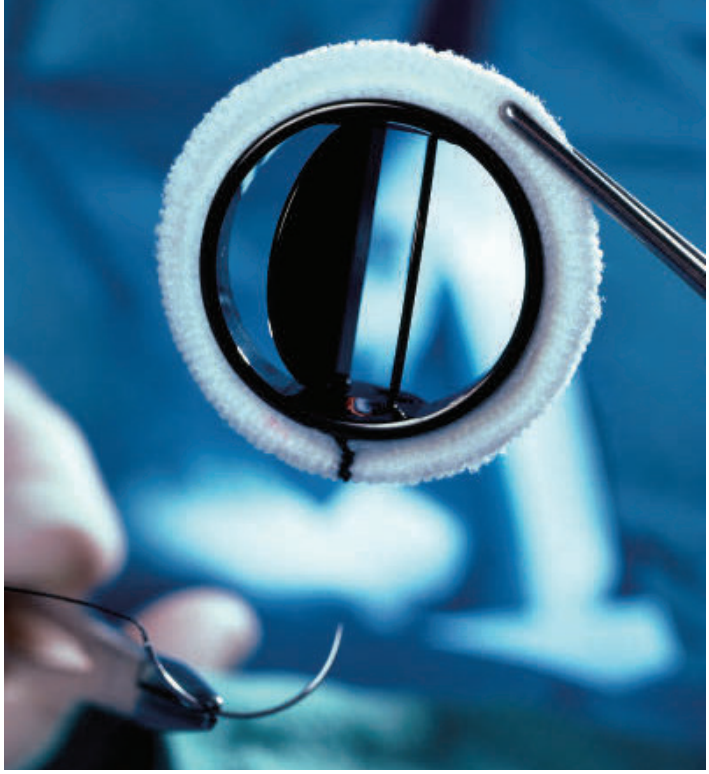
Life Sciences Graphite Grades

Suitable for U.S. FDA Class II and III applications



OVERVIEW

Entegris' life sciences graphite grade materials are ideal for mechanical components in medical devices. These life sciences graphite grades are suitable as a base substrate for pyrocarbon coatings, used in high wear internal medical applications. The consistent particle size and microstructure along with high strength produce a material that is easily machined into precision parts.

We have developed post synthesis modifications to make our graphites more suitable to specific medical applications. As a producer of highly technical, specialty materials, we also offer design engineering support, precision machining, and extensive material testing.

BIOMEDICAL APPLICATIONS

For many years, the proven biocompatibility, safety, and efficacy of graphite allow our implantable biomaterials to be used for U.S. FDA Class II and III applications such as mechanical heart valves, orthopedic prosthetics, and cancer treatments. Our graphites offer a unique combination of thermal expansion, uniformity, high strength, and machinability to meet the stringent requirements set for critical materials in the biomedical market. The compatibility of carbon and graphite with human tissues and bodily fluids allows our biomedical grade materials to be safely used in a variety of implantable applications.

For ultrasonic applications, the proven performance of our fine grain graphite allows it to be used in next-generation probes. Providing unique acoustic properties, our graphite ensures that your equipment delivers the performance needed for your most demanding customers.

BENEFITS

- High purity
- Compatible with human body
- High strength
- Precision machinable
- High temperature compatibility

TUNGSTEN GRAPHITE

For internal medical applications, we produce a specialty blended material, AXF-5Q10W. This material combines high strength premium graphite with tungsten to produce a material that is both strong and visible under x-ray. AFX-5Q10W graphite is currently in use worldwide as a substrate material for numerous FDA-approved artificial heart valves and finger and elbow joint replacements. Our life sciences graphite grades comply with the strict demands of CFR 21, Subchapter H, for regulation of medical device manufactures and we have implemented the certification and inspection procedures to satisfy these federal requirements.

BIOMEDICAL GRAPHITE TYPICAL PROPERTIES

Property	AXF-5Q	AXF-5Q10W	AXF-5Q20W
Particle size	5 µm	5 µm	5 µm
	200 µin	200 µin	200 µin
Apparent density	1.78 g/cm³	2.1 g/cm³	2.1 g/cm³
	0.0641 lb/in³	0.0759 lb/in³	0.0759 lb/in³
Compressive strength	145 N/mm²	145 N/mm²	145 N/mm²
	20,000 psi	20,000 psi	20,000 psi
Flexural strength	90 N/mm²	68 N/mm²	68 N/mm²
	12,500 psi	10,000 psi	10,000 psi
Shore hardness	74	72	72
Electrical resistivity	1470 µΩ-cm	1550 µΩ-cm	1550 µΩ-cm
	580 µΩ-in	610 µΩ-in	610 µΩ-in
Coefficient of thermal expansion	7.9 µm/m°C	7.7 µm/m°C	7.7 µm/m°C
	4.4 µin/in°F	4.3 µin/in°F	4.3 µin/in°F
Thermal conductivity	95 W/m-K (55 Btu-ft/hr/ft²°F)	150 W/m-K* (90 Btu-ft/hr/ft²°F)*	150 W/m-K* (90 Btu-ft/hr/ft²°F)*

**Estimated values*

FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit entegris.com and select the Contact Us link to find the customer service center nearest you.

TERMS AND CONDITIONS OF SALE

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit entegris.com and select the Terms & Conditions link in the footer.

Entegris

Corporate Headquarters
129 Concord Road
Billerica, MA 01821
USA

Customer Service
Tel +1 952 556 4181
Fax +1 952 556 8022
Toll Free 800 394 4083