



Carbonized PTFE

Carbon Reinforced Polytetrafluoroethylene

⚡ Antistatic | Increased Mechanics

Material Type

PTFE + 25% Carbon

Form: Flat / Plate / Rod / Pipe

Combustion Class: **V0 — NON-COMBUSTIBLE**

MATERIAL DESCRIPTION

Carbonized PTFE is a composite Teflon derivative whose mechanical properties and load-carrying capacity are significantly increased by adding carbon fiber or graphite reinforcement to the pure PTFE matrix. It offers 1.4-2 times higher modulus of elasticity, better wear resistance and antistatic conductivity compared to pure PTFE. Compressor rings are specifically designed for dynamic seals and high pressure sliding surface applications. Generally not recommended for food applications.

MECHANICAL AND PHYSICAL PROPERTIES (ISO/ASTM)

Feature	Unit	Value	Feature	Unit	Value
Intensity	g/cm ³	~ 2.10	Shore D Hardness	—	65 – 70
Yield Stress	MPa	~ 15	Friction Coefficient	—	0.10 – 0.15
Yield Elongation	%	~ 10	Melting Temperature	°C	~ 327
Breaking Stress	MPa	~ 20	Continuous Use	°C	~ 260
Elongation at Break	%	~ 100	Work. Gene. Coefficient	10 ⁻⁴ K ⁻¹	0.8 – 1.0
Elasticity Modulus	MPa	1000 – 1500	Surface Resistance	Ohm	10⁴ – 10⁶
Impact Resistance	kJ/m ²	Middle	Combustion Class	UL 94	V0
Water Absorption	%	0	Service Temperature	°C	-200 / +260

AREAS OF APPLICATION

Compressor Rings

Dynamic Seals and Rings

High Pressure Bearings

Piston Guide Bands

Pump and Valve Components

Energy / Chemical Industry

CHEMICAL RESISTANCE AND GENERAL PROPERTIES

It shows very high resistance to acids, bases and solvents while largely preserving all the chemical resistance properties of pure PTFE. Carbon reinforcement significantly increases the wear resistance and compressive strength of the material compared to pure PTFE; It offers much longer life on dynamic and loaded sliding surfaces. Thanks to its antistatic feature, it prevents the accumulation of electrostatic charge — this feature provides a critical safety advantage in flammable environments. It is generally unsuitable for food applications due to its carbon content; Pure PTFE should be preferred for this use. It offers a reliable solution in tribologically challenging applications in the machinery, chemical and energy sectors.

The technical information specified in this document reflects the reference values of international ISO/ASTM standards. Chemical resistance may vary depending on concentration, temperature and exposure time.

CORUM BRONZE

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