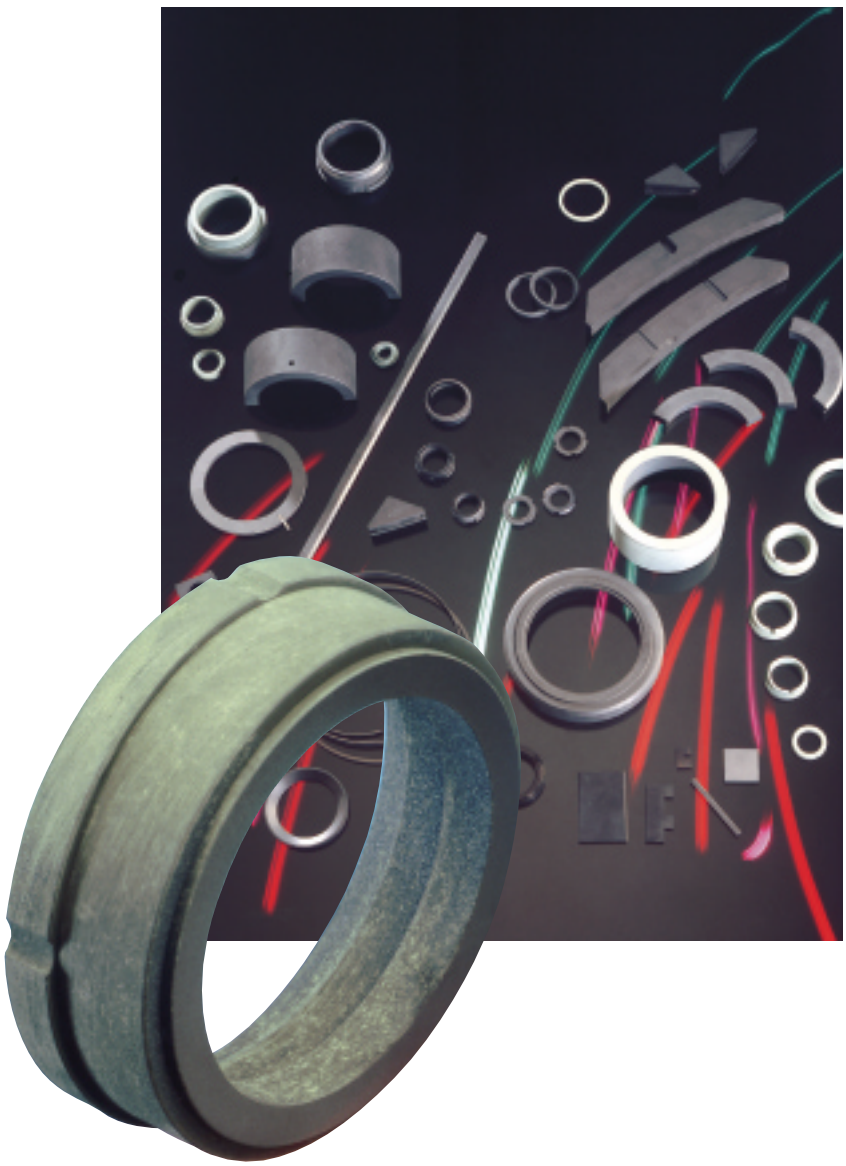
ISO 9002

CARBONS and GRAPHITES for mechanical applications



GROUPE CARBONE LORRAINE

Where and when Carbons and Graphites should be used

Applications

- Guiding and friction:
  bearings, thrust bearings,
  rotors, vanes, ...
- Dynamic sealing:
  rotating shafts, pistons, ...
- Aerospace - Main shaft seals,
  Flex tubing seals, APV seals,...

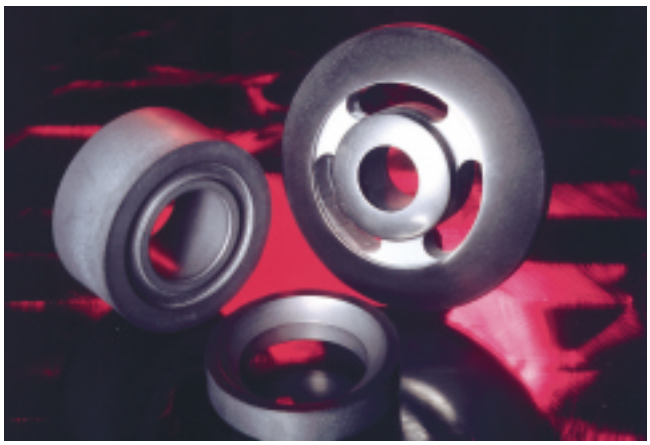
Material solution

- thermal shock
- tribologic
- lifetime
- corrosion resistance
- temperature resistance
- weight (1.8 density)

Carbon products are better than other friction reducing materials. For example:

At high temperatures

212°F (100°C) to 300°F (150°C)
Temperatures exceeding 100°C to 150°C prohibit the use of standard oils and grease. The thermal stabilty and self-lubricating features of carbon allow its use as a bearing material in this temperature range. Applications include (but are not limited to) furnaces, dryers, heated mixers, chemical installations, and the manufacture of paper pulp.



In corrosive fluids or atmospheres

Carbons and graphites are chemically inert and corrosion resistant. Wherever ordinary lubricants are not recommended, carbons and graphites perform well, either dry in a corrosive atmosphere or immersed in corrosive liquids.

To avoid contamination by lubricants

Carbons and graphites are critical in applications where the presence of oil or grease, even in vapor form, is prohibited. Examples can be found in the food, pharmaceutical and textile industries.

When lubrication is difficult or expensive

Carbons and graphites are efficient dry self-lubricants, which is an attractive property in applications such as control instruments, telephone equipment and meters.

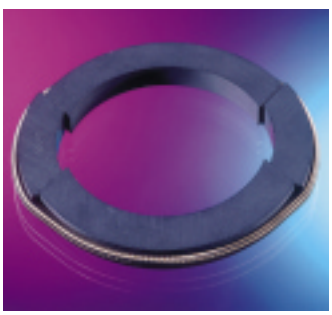
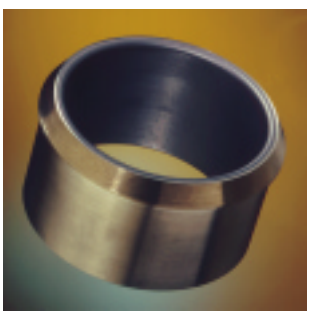
Where moving parts are inaccessible

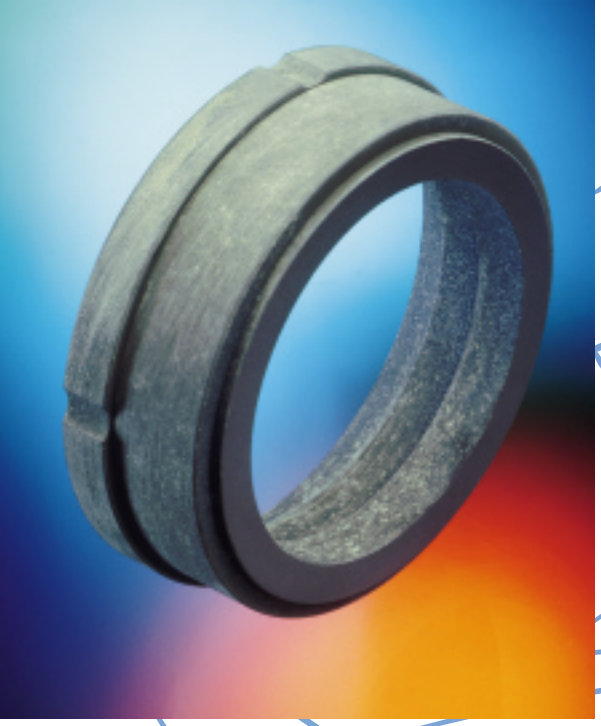
Without carbons and graphites, the maintenance of certain types of equipment becomes virtually impossible due to difficult access to moving parts. A few examples: marine equipment, pumps, metering pumps and certain equipment in the textile and chemical industries.

When weight saving is required

The density of carbon is about 1.5 to 2.5, much lower than metals.

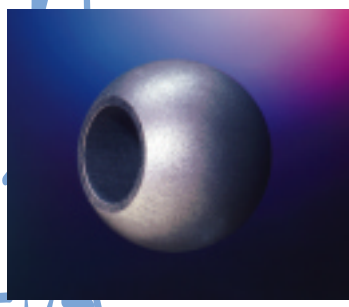


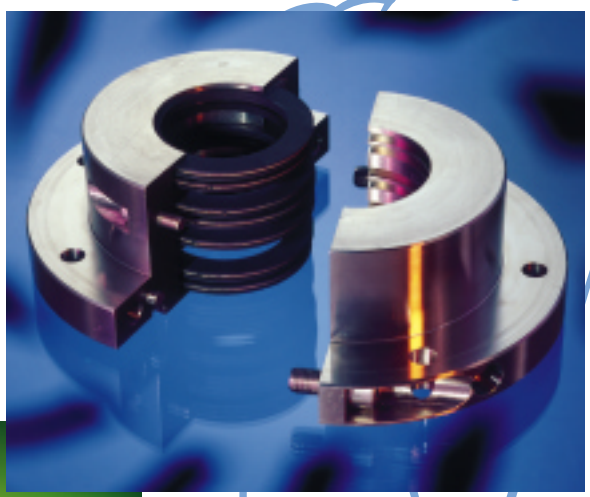


Silicon carbide converted graphite seal ring

Shaft bearing-Aerospace

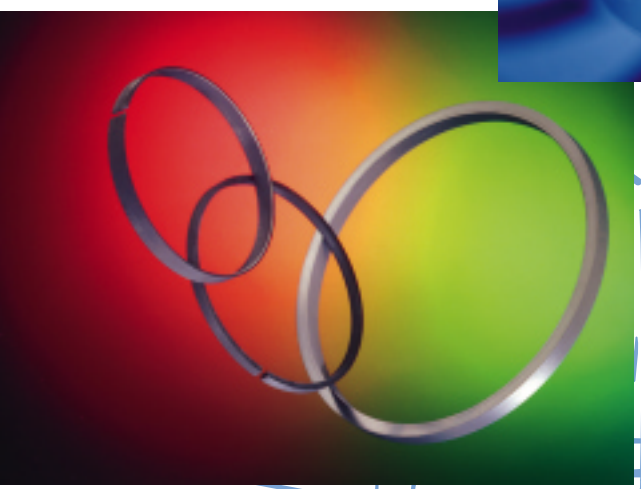


Spherical self aligning bearing



Compressor shaft seal

Triple seal ring assembly. Aerospace



Carbons and graphites for mechanical applications

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