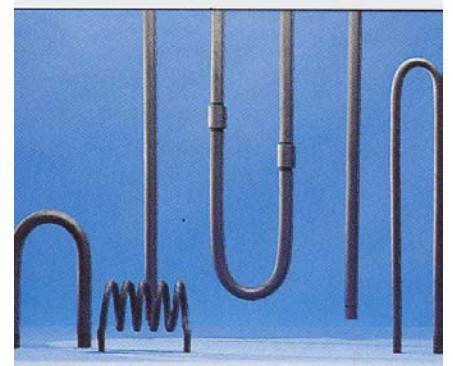


Industrial applications

Speciality graphite



Specialty Graphite

Definition

and special characteristics

Examples of application



Definition

Specialty graphites are man made artificial carbon and graphite grades with an average grain size typically less than 1mm (0.04in). Apart from being very pure, thermally and chemically stable, resistant to thermal shocks, thermally conductive (up to 3000°C) and corrosion resistant, specialty graphite has a programmable electrical resistance. The [application of specialty graphite](#) is a.o. electrodes, heating elements and susceptors.

Very pure specialty graphite is called [nuclear graphite](#) as it can be applied in the nuclear industry as a moderator for thermal neutrons in water- and gas-cooled nuclear fission reactors. This is thus high-performance industrial material, applied e.g. for the production of computer chips.



Properties

- homogeneous fine-grain structure
 - high density
 - suitable resistivity
 - very high purity



Properties

The properties of specialty graphite involve a special industrial application of the product.

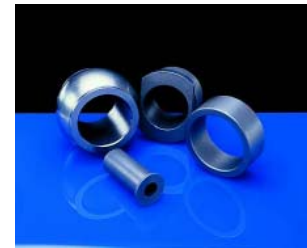
- Thermal application: heating elements for pulling optical fibres,
- Stable material: blocks for casting dies for railroad wheels, graphite electrodes for electrical discharge machining, vacuum sintering furnaces systems equipped with heating systems and structural elements made of specialty graphite.
- Corrosion/chemical resistant: bearings and sealing elements for pumps, electrolytic cells, carbon brushes for asynchronous slip ring rotor machines, sliding strips.
- Electrical conductivity: multipart sealing rings for turbines, lings of nuclear fusion reactors.
- Nuclear application: pyrolytically coated graphite tubes made of super-pure specialty graphite for atomic absorption spectroscopy
- Medical and laboratory technology: atomic absorption spectroscopy for detecting trace elements



Examples of Applications

Specialty graphites are used for

- Manufacturing of Computer (chips)
- Semiconductor technology
- Non-ferrous metals production
- Industrial furnace technology
- Glass industry
- Ceramics industry
- Mechanical components
- Heat treatment industry
- Medical and laboratory technology
- Railways and transportation
- Environmental technologies
- Aerospace technologies
- Nuclear processing



Mechanical components
(bearings)



Medical and laboratory
technology



Heat treatment industry

