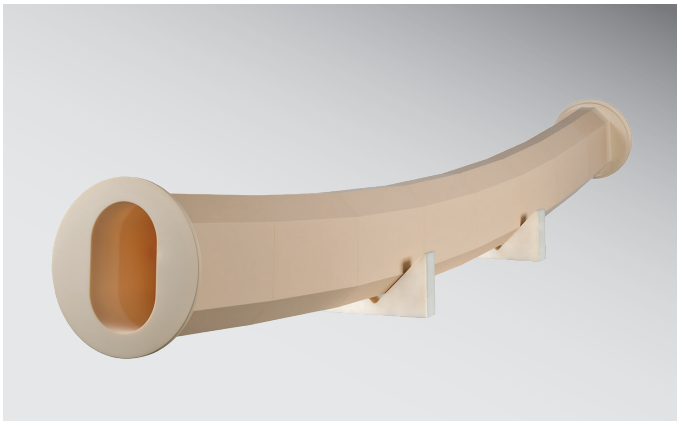
Aliaxis
UTILITIES & INDUSTRY

FRIATEC

FRIALIT®-DEGUSSIT® HIGH-PERFORMANCE CERAMICS
VACUUM CHAMBER FOR DIPOLE MAGNET

Application:
Ceramic vacuum chamber for dipole magnet

Material:
Aluminium Oxide **FRIALIT F99.7**



FRIATEC works photo

FRIATEC manufactures insulators made of Aluminium Oxide **FRIALIT F99.7** in customised dimensions. The ceramic-to-ceramic and ceramic-to-metal assemblies made of **FRIALIT F99.7** display only minimal leakage and outgassing rates, which allows for ultimate pressures < 8 x 10^{-10} mbar. They are thus ideal for the use in ultra-high vacuum (UHV) conditions.

Products made of FRIALIT-DEGUSSIT High-Performance Ceramics are used throughout the world in particle accelerators in research and development as well as in the medical field. The accelerator component shown above is used in the Institute of High Energy Physics (IHEP) in Beijing as vaccum chamber in the dipole magnet.

Special features:
- Ceramic polished sealing surface (leakage rate < 1,0 x 10^{-9} mbar l x s^{-1})
- Glass-brazed segments

Dimensions:
- Ceramic clamping flange: outer dimension = 301 mm
- Total length of the tube: 2800 mm at an angle of 15° ± 0,8°
- Tube (inside): race track = 218 x 135 mm
- Tube (outside): octagon

With the construction and production of this vacuum chamber we were able to meet new challenges. It is currently the biggest joined ceramic assembly in the long history of FRIATEC.

Are you looking for a similar solution?
We will be happy to take on the challenge.

- **Minimum desorption and leakage rates**
- **Heatable up to 300° C**
- **Excellent insulation properties**
- **Non-magnetisable**

Competence in Advanced Ceramics
Engineering for customized solutions

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