HIGH-PERFORMANCE CERAMICS

INSULATORS FOR CRYOGENIC APPLICATIONS



Application:
Insulators for cryogenic applications
(Cryogenic Ceramic Breaks)

Material:
Alumina F99.7 and F99.7 hf

High-performance ceramics are increasingly used in cryogenics, i.e. applications using liquid nitrogen (LN2) or liquid helium (LHe).

Insulators and insulation tubes made of F99.7 and F99.7 hf can be fitted with ribs and glaze on the outside. The rib structure increases the creepage distance, leading to higher electric strength when used in atmospheric applications. The glaze facilitates handling and cleaning of the component.

The ceramic-to-metal assemblies can be customised to suit the requirements of the respective application by selecting suitable metal parts and brazing materials as well as appropriate constructions and wall thicknesses. They are ideally suited to withstand stresses from pressure, corrosion and temperature.Depending on the type of construction, the insulating tubes can be used in temperatures ranging from -271 °C to 450 °C and for internal pressures up to approx. 100 bar.

As standard, the insulation tubes are tested for vacuum tightness (He leak test with a leakage rate: < 10-9 mbar l/s). They can be fitted with different types of flanges, such as CF, KF or COF.

Optional tests like pressure tests, thermal cycling or electrical tests for resistance, dielectric strength and creepage distance could also be performed.

Fields of Application:
- Energy technology, electrical insulation of superconducting cables
- High-energy technology (particle physics), insulation of LN_2 or LHe conductors
- Medical technology, medical gas extraction or storage of sample material

- **Small desorption and leakage rates**
- **High pressure resistance**
- **Best insulation properties**
- **Temperature resistance between -271°C and 450°C**

KYOCERA Fineceramics Europe GmbH
E-Mail: info@kyocera-fineceramics.de · www.kyocera-fineceramics.de

© 2025 KYOCERA Fineceramics Europe GmbH. We reserve the right to make changes without prior notice.