



*Division FRIALIT®-DEGUSSIT®  
Engineered Technical Ceramics*

FRIATEC N.A. LLC  
Engineered Products  
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## Technical Data Sheet Ceramic-to-Metal Assemblies

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### **Product Description**

FRIATEC offers an extensive line of custom made ceramic-to-metal feedthroughs. Our high quality standards, combined with our outstanding manufacturing knowledge, enable us to fulfill the high demands of our customers for custom designed ceramic-to-metal junctions used in high vacuum and high voltage applications.

The FRIATEC product line offers high purity alumina with an alumina content of 99.7%. The combination of high purity alumina with a variety of special alloys, including titanium, enables FRIATEC to design and manufacture component parts according to our customer's specifications. FRIATEC delivers high vacuum proof and pressure resistant electrical feedthroughs and insulating tubes for high voltage, high current and measuring techniques in industry, nuclear reactor construction and research.

### **Product Benefits**

- High mechanical strength even at high temperatures
- High thermal shock resistance at high and low temperatures
- Good thermal conductivity
- High electrical volume and surface resistance
- High dielectric strength
- Low dielectric losses at high frequencies
- Low cross section for neutron absorption when used in nuclear technology
- Some electrical feedthroughs are available with non-magnetic metal parts

### **Typical Applications**

- Research labs and particle physics laboratories
- X-ray image amplifiers
- X-ray tubes for radiology
- Pressure sensors
- Acceleration units for radiology
- Insulators for use in deep vacuum environment

**Product Samples**



**X-Ray Tube for Radiology**



**X-Ray Image Amplifier**



**Pressure Sensor for Aircraft &  
Space Technologies**



**Acceleration Unit for Radiology**



**Insulator for use in Deep  
Vacuum Environment**



**High-Voltage Insulators for Deep  
Vacuum Installations**



**Insulating tubes for  
Vacuum Technologies**



**Isolating lead-in Insulators for High-  
Voltage Power Systems**