

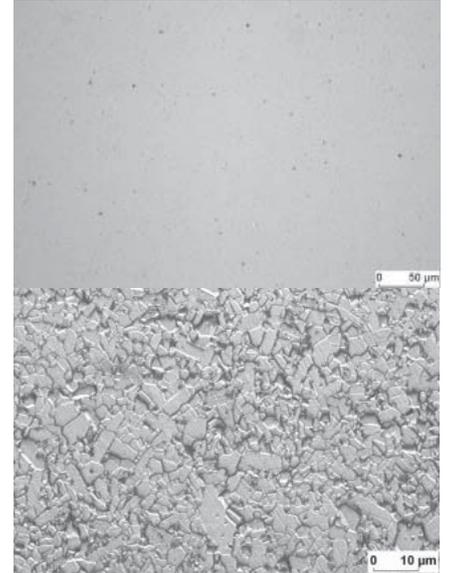


# EKasic® F THERMOCOUPLE SHEATHS

Thermocouple sheaths made of EKasic® F silicon carbide show an excellent performance under corrosive and abrasive conditions and very high temperatures. Only EKasic® F provides absolute gas impermeability and high purity of > 99 % SiC at the same time.



EKasic® F Thermocouple Sheaths for extreme environments



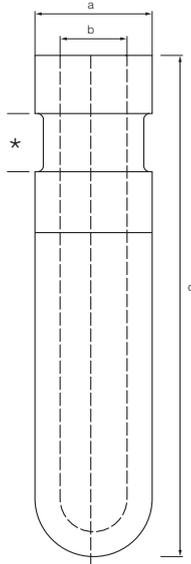
EKasic® F microstructure

## Advantages

- extreme temperature resistance up to 1800 °C
- excellent oxidation resistance
- no deformation at high temperatures
- fast response due to high thermal conductivity
- very good thermal shock behaviour
- no gas permeability
- pure SiC matrix
- absolute corrosion resistance against aggressive media
- high abrasion resistance

## Applications

- furnaces and combustion chambers under harsh conditions (corrosive and abrasive media, high velocities)
- desulfurization units



\* supplied with or without groove



## Properties

Density	g/cm <sup>3</sup> % TD	> 3,10 < 97
Porosity total	vol %	< 3,0
Porosity open	vol %	0
Young's modulus	GPa	410
Flexural strength	MPa	400
Fracture toughness	MPa√m	4
Vickers-hardness	HV10	25,5
Thermal conductivity	W/mK	125
Coefficient of thermal expansion	20 – 1.000°C 10 <sup>-6</sup> K <sup>-1</sup>	4,5
Thermal stress parameters at 20 °C $R_1 = \sigma_B \cdot (1-\nu) / (\alpha \cdot E)$ $R_2 = R_1 \cdot \lambda$	[K] [W/mm]	198 25

## Technical Information

Standard sizes and adaptor systems		
Outside dia (mm) a	Inside dia (mm) b	Length (mm – up to) c
16	8	550
With circumferential hemispherical groove		
22	12	900
28	16	1200
With circumferential flat bottomed groove		

Other sizes available on request.

We offer a choice of purpose designed high temperature steel fixed screw or flexible ball joint adaptor systems to allow the sheaths to be secured in position.

EKasic® F / Thermocouple Sheaths / e-0703

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001, DIN EN ISO 14001. EKasic® is a registered trademark of ESK Ceramics GmbH & Co. KG

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