CFS Pyrolite

Cordierite & Mullite | Material Data

Under the CFS Industrial Ceramics brand, we offer a group of ceramic materials with dense and porous structures, characterised by very good thermal shock resistance combined with high heat resistance and electrical insulation strength.

CFS Industrial Ceramics Materials

Our CFS Industrial Ceramics materials, corresponding to C 410, C 511, C 520 and C530 according to IEC 672, are ceramic materials based on cordierite, a magnesium aluminium silicate mineral with low thermal expansion. They also contain additions of mullite, corundum and SiC.

Properties

CFS Industrial Ceramics materials offer:
- Outstanding thermal shock resistance
- High temperature resistance
- High electrical insulation strength
- Corrosion resistance
- Comparatively low manufacturing costs

CFS C 410

CFS C 410 is dense cordierite with high mechanical strength. It is particularly suitable for applications that cannot tolerate pores in the material (moisture).

CFS C 520

CFS C 520 has a fine porous structure and very good thermal shock resistance due to its increased cordierite content. It is the standard material for many applications and is very economical to process due to high production volumes.

CFS C 530

CFS C 530 offers extremely good thermal shock resistance and high compressive strength due to its increased aluminium oxide content. It has the highest temperature resistance of all cordierite-based materials, at approximately 1300 °C.

CFS C 530 / C 610

We also offer porous mullite (C 530 / C 610). This material has very high temperature resistance of 1600 °C. However, its thermal shock resistance is lower than that of the cordierite materials.

PHYSICAL PROPERTIES	C 410	C 511	C 520	C 530	C 530 / C 610
Material base	Cordierite	Cordierite	Cordierite	Cordierite	Mullite
Open porosity %	< 0,5	20	20	30	25
Density g/cm³	2,1	1,9	1,9	2,1	2,1
Flexural strength N/mm²	60	25	30	30	30
CTE 20-600 °C 10^{-6} K^{-1}	2 - 4	4 - 6	2 - 4	4 - 6	5 - 7
Max. service temperature °C	1280	1200	1240	1300	1600
Thermal conductivity W/m K	1,5 - 2,5	1,3 - 1,8	1,3 - 1,8	1,4 - 2,0	1,4 - 2,0
Temperature for volume resistivity of 1MΩcm °C	400	500	500	600	600
Thermal shock resistance	very good	good	very good	excellent	good

Technical values according to IEC 672, VDE 0335 and the underlying internal analyses.

All materials listed in this table are RoHS-compliant according to Directive 2002/95/EC.

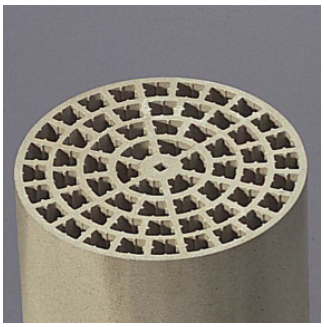
Applications & Products

CFS Industrial Ceramics | Cordierite & Mullite

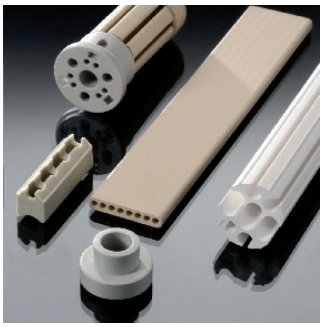
Applications

The very good electrical properties make CFS Industrial Ceramics materials suitable for heating applications. Established products include heating element supports, such as multi-bore tubes and grooved tubes, spark protection barriers and insulators for high and rapidly changing temperatures, welding backings, immersion measuring heads for temperature measurement in steelmaking, and shaped parts for foundries.

Our Product Range



Multi-bore tubes



Heating element supports



Grooved tubes



Welding ceramics

Materials from CFS Industrial Ceramics

- CFS Cordierite / Mullite
- CFS Steatite
- CFS Hard porcelain
- CFS Porous ceramics
- CFS Ceramic coatings
- CFS Magnesium oxide
- CFS Varistor ceramics
- CFS PTC ceramics

Enquiries

We will be happy to advise you on material selection and prepare a quotation. Please send us an enquiry drawing together with the required quantities.

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