Technical Ceramics

PYROLIT
Cordierite & Mullite

Pyrolit is our brand name for a variety of dense and porous ceramic materials, which show a very good thermal shock resistance at high thermal resistance and electrical insulation.
Pyrolit: Cordierite & Mullite

Pyrolit is our trade name for a range of cordierite materials C 410, C 511, C 520 and C 530 according to IEC 672. They are based on magnesium-aluminium-silicate minerals with addition of mullite, corundum and silicon carbide and show very little thermal expansion.

Characteristics for these materials are:
- Outstanding thermal shock resistance
- High thermal resistance
- High electrical insulation
- Corrosion resistance
- Competitively low-priced manufacturing costs

Pyrolit C 410 is dense sintered cordierite with high mechanical strength. It is suited for applications that must not have any pores storing humidity inside the material.

Pyrolit C 520 is a finely grained porous material and due to its high content of cordierite it is very thermostoek-resistant. It is a standard material for many applications and because of the high output it can be produced low-priced.

Pyrolit C 530 shows an extremely high thermal shock resistance and high compression strength due to an increased content of alumina. It also has the highest thermal resistance of 1300 °C (~ 2400 °F) of all cordierite-based materials.

Furthermore, we offer porous mullite (C 530 / C 610). That material has a very high thermal resistance of up to 1600 °C (~ 2900 °F). However, the thermal shock resistance is lower compared to cordierite materials.

Applications

The very good electrical properties recommend Pyrolit for applications in the heating technology. Proven products are supports for heating elements, e.g., multihole tubes or spiral pipes, spark killers and insulators in the field of high and fast alternating temperatures as well as welding back-ups, sensor housings for thermocouples (steelmaking) and crucibles and molds for foundries.

Physical Characteristics

<table>
<thead>
<tr>
<th>Material base</th>
<th>C 410</th>
<th>C 511</th>
<th>C 520</th>
<th>C 530</th>
<th>C 530 / C 610</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open porosity %</td>
<td>&lt;0,5</td>
<td>20</td>
<td>20</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>Density g/cm³</td>
<td>2,1</td>
<td>1,9</td>
<td>1,9</td>
<td>2,1</td>
<td>2,1</td>
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<tr>
<td>Flexural strength N/mm²</td>
<td>60</td>
<td>25</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Coefficient of linear expansion 20-600 °C 10⁻⁶ K⁻¹</td>
<td>2 - 4</td>
<td>4 - 6</td>
<td>2 - 4</td>
<td>4 - 6</td>
<td>5 - 7</td>
</tr>
<tr>
<td>Max. operation temperature °C</td>
<td>1280</td>
<td>1200</td>
<td>1240</td>
<td>1300</td>
<td>1600</td>
</tr>
<tr>
<td>Thermal conductivity W/m K</td>
<td>1,5 - 2,5</td>
<td>1,3 - 1,8</td>
<td>1,3 - 1,8</td>
<td>1,4 - 2,0</td>
<td>1,4 - 2,0</td>
</tr>
<tr>
<td>Temperature for volume resistance 1MQcm °C</td>
<td>400</td>
<td>500</td>
<td>500</td>
<td>600</td>
<td>600</td>
</tr>
</tbody>
</table>

Thermal shock resistance very good good very good excellent good

Technical parameters according to IEC 672, VDE 0335 and Rauschert internal analysis. All materials mentioned in this chart are RoHS-compliant according to directive 2002/95/EG.

Our range of products

- Multihole tubes
- Heating element supports
- Spiral pipes
- Welding ceramics

Inquiries

To enable us to forward quotations please send a drawing of the part together with quantities and tolerances.

Your contact person

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Materials from Rauschert

- RAPAL® 300 Aluminium oxide
- RAPAL® 200 Aluminium oxide
- RAPAL® 100 Aluminium oxide
- RAPAL® 200 AZ
- Zirconia toughened Aluminium oxide
- RAPAL® Aluminium oxide
- RAPOX® Aluminium oxide
- Zirconium oxide
- Silicon nitride
- Pyrolit Cordierite
- Steatite
- Porcelain
- Porous ceramics
- Ceramic coatings
- Magnesium oxide
- Varistor ceramics
- PTC-ceramic

Rauschert at a glance

With more than 100 years experience in supplying industrial customers Rauschert can also be a reliable partner for you.

With 1,200 employees in 12 manufacturing plants Rauschert is meeting today’s international challenges.

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