3M™ Calcium Hexaboride -20 mesh

3M™ Calcium Hexaboride (CaB₆) powder is the only deoxidizing agent for copper which does not reduce the electrical conductivity.

![Image of Calcium Hexaboride](image)

Black powder with metallic lustre

**Advantages**
- No reduction of the electrical conductivity
- Ideal for melts using recycled copper
- Only 60 g of CaB₆ is needed for 100 kg melt
- 3M offers a technology to provide the optimal particle size to meet the required reaction time
- With the particle size up to 20 mesh the chemical reaction can be completed, because the powder dissolves slowly
- It is easy to handle

**Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical formula</td>
<td>CaB₆</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>g/mol 104.95</td>
</tr>
<tr>
<td>Crystal structure</td>
<td>cubic</td>
</tr>
<tr>
<td>Density</td>
<td>g/cm³ 2.45</td>
</tr>
<tr>
<td>Melting point (°C)</td>
<td>2,235</td>
</tr>
<tr>
<td>Melting point (°F)</td>
<td>4,055</td>
</tr>
</tbody>
</table>

**Chemistry (typical values)**

- Ca + B > 90 %
- C < 5 %

**Grain size distribution (typical values)**

- Particle size - 20 mesh
- d₅ > 40 μm
- d₉₇ < 850 μm

In the copper production process, oxygen is a disruptive factor. It enters the melt and reacts with the copper to Cu₂O. If it is not removed, it causes porosity of the casting. As a deoxidant, calcium hexaboride removes the detrimental copper oxide.

3M Technical Ceramics developed a technology that allows to produce the optimal particle size of 20 mesh.

**Storage**

CaB₆ mesh powder is recommended to be used within 3 years after delivery and should be stored under dry conditions.
The management system has been certified according to DIN EN ISO 9001, DIN EN ISO 50001, DIN EN ISO 14001.

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