

# 3M™ Calcium Hexaboride -20 mesh

3M™ Calcium Hexaboride ( $\text{CaB}_6$ ) powder is the only deoxidizing agent for copper which does not reduce the electrical conductivity.



Black powder with metallic lustre

In the copper production process oxygen is a disruptive factor. It enters the melt and reacts with the copper to  $\text{Cu}_2\text{O}$ . 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.

## Advantages

- No reduction of the electrical conductivity
- Ideal for melts using recycled copper
- Only 60 g of  $\text{CaB}_6$  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

## Storage

$\text{CaB}_6$  mesh powder is recommended to be used within 3 years after delivery and should be stored under dry conditions.

### Properties

Chemical formula		$\text{CaB}_6$
Molecular weight	g/mol	104.95
Crystal structure		cubic
Density	g/cm <sup>3</sup>	2.45
Melting point	°C	2,235
	°F	4,055

### Chemistry (typical values)

Ca + B	> 90 %
C	< 5 %

### Grain size distribution (typical values)

Particle size	-20 mesh
$d_5$	> 40 $\mu\text{m}$
$d_{97}$	< 850 $\mu\text{m}$

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