



# CALCIUM HEXABORIDE POWDER

Calcium Hexaboride ( $\text{CaB}_6$ ) belongs to the group of the cubic hexaborides. It is probably the least expensive of the high boron content borides on the market.



Calcium hexaboride powder

## Properties

Product data		
Chemical formula		$\text{CaB}_6$
Molecular weight	g/mol	104.95
Crystal structure		cubic
Specific gravity	kg/m <sup>3</sup>	2.450
Melting point	°C	2.235
Hardness (Mohs scale)	*)	8-9
Hardness (Knoop scale), HK 0.1	N/mm <sup>2</sup> *)	1.650
Thermal expansion (20-1000 °C)	K <sup>-1</sup> *)	$6.5 \cdot 10^{-6}$
Thermal conductivity (at room temperature)	W/m · K *)	70
Electrical resistivity (at room temperature)	Ω cm*)	$100 \cdot 10^{-6}$
Maximum application temperature, - oxidizing atmosphere - inert atmosphere	°C °C	700 2.000

\*) measured on dense shapes



Calcium hexaboride lump

## Application

- Deoxidizing agent for non-ferrous molten metals and alloys, in particular for copper
- Additive for carbon containing refractories (antioxidant)
- Raw material for the production of other boron compounds

## Chemical resistance

HCl	no reaction
HNO <sub>3</sub>	noticeable reaction

## Chemistry (typical values)

Product data		
Particle size	- 20 mesh (840 µm and finer)	- 400 mesh (45 µm and finer)
B	> 55.5%	> 52.5%
Ca	> 32.5%	> 29.5%
C	< 5.0%	< 6.0%

Additional particle sizes on request.

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.

ESK Ceramics GmbH & Co. KG  
 Max-Schaidhau-Strasse 25  
 87437 Kempten, Germany  
 www.esk.com, info@esk.com