Single Crystal Investigation and Physical Properties of the Binary Compound CeB_4

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Dedicated to Dr. Bernard Chevalier on the occasion of his 60th birthday

The structure of CeB_4 has been determined by single crystal X-ray diffraction. The compound crystallizes in the ThB_4 structure type (space group $P4/mbm$, a = 7.2034(8), c = 4.1006(5) Å; 270 reflections with $F_o \geq 4\sigma(F_o)$, $R1$ = 0.023, $wR2$ = 0.052). The results of the magnetic and electrical resistivity measurements indicate a strong *f-d* hybridization of the $4f$ electrons of the cerium atom.

Key words: Cerium Boride, Crystal Structure, Magnetic Behaviour, Electrical Resistivity