

Boron-Carbon Order and Symmetry Control: Single-Crystal X-Ray Study of SmB_2C_2

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Dedicated to Professor Wolfgang Jeitschko on the occasion of his 70th birthday

The title compound was prepared from the elements by arc-melting followed by annealing in silica tubes at 1270 K for one week. The crystal structure was investigated by means of X-ray single crystal diffraction: space group $P4/mbm$, $a = 5.366(1)$, $c = 3.690(1)$ Å, $Z = 2$, $R1 = 0.010$, $wR2 = 0.022$ for 245 unique reflections with $I_0 > 2\sigma(I_0)$ and 12 refined parameters. Group-subgroup relationships of MB_6 and MB_2C_2 structure models are discussed.

Key words: Samarium Boride Carbide, Crystal Structure, Group-Subgroup Relationships