Tribochemical Synthesis and Structure of K_2BiF_5

Horst P. Beck, Daniel Becker, and Robert Haberkorn

Institut für Anorganische und Analytische Chemie der Universität des Saarlandes, Campus Geb. C4.1, 66123 Saarbrücken, Germany

Reprint requests to Prof. Dr. H. P. Beck. Fax: 0681-302-4233. E-mail: hp.beck@mx.uni-saarland.de

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The synthesis of K_2BiF_5 by a tribochemical reaction is reported. This compound crystallises in a K_2SmF_5-type arrangement with the lattice parameters $a = 11.3862(2)$, $b = 7.5480(1)$, $c = 6.6008(1)$ Å and space group *Pnma*. The effect of substituting Bi into the K_2SmF_5-type structure is discussed in comparison with other compounds considering the effect of the lone-pair activity of Bi^{3+}.

Key words: Fluorobismutates, Lone-pair Effects, Deformation Tensor