CRYSTAL STRUCTURES OF SULFATHIAZOLE POLYMORPHS IN THE TEMPERATURE RANGE 100-295 K: A COMPARATIVE ANALYSIS

T. N. Drebushchak,[1,2] E. V. Boldyreva,[1,2] and M. A. Mikhailenko[1,2]

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The response of four polymorph modifications of sulfathiazole $C_9H_9N_3O_2S_2$ to variation of temperature was examined in the range 295-100 K by single crystal X-ray diffraction. No phase transitions occur in this temperature range; all the structures exhibit anisotropic contraction. The metastable sulfathiazole modification I is drastically different from the other modifications (II, III, and IV) in the anisotropy of structure distortions and changes in the intra- and intermolecular geometry, although bulk thermal expansion is virtually similar for all polymorphs within the temperature range studied.

Keywords: polymorphism, hydrogen bonding, sulfathiazole, single crystal X-ray diffraction, low temperatures, thermal expansion.