Structural role of hydrogen bond networks in amino acid-acid systems. (II) The network with weakly polarizable OHO hydrogen bonds in sarcosine-*p*-toluenesulfonic acid (1:1) crystal.

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Streszczenie

The sarcosine–*p*-toluenesulfonic acid (1:1) crystal crystallizes as monoclinic system and belongs to the: (i) $P2_1/c$ at 293 and 200 K; (ii) $P2_1/n$ at 100 K space groups. It was selected for examination of two problems: relations between different components of the amino acid–acid hydrogen bond network and a role of medium strong and weakly polarizable OHO hydrogen bond in the main structural units of the crystal: sarcosinium–*p*-toluenesulfonate complexes. Our observations are based on phase transitions of the crystal monitored by DSC, X-ray diffraction and temperature evolutions of selected modes of IR spectra. The O⋯O distance of the primary hydrogen bond as well as conformations of sarcosinium and *p*-toluenesulfonate are very sensitive on state of NHO secondary hydrogen bonds.

Słowa kluczowe

Sarcosine–p-toluenesulfonic acid crystal, X-ray, IR, DSC, Hydrogen bond, Proton transfer, Polarizability, Phase transition

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