High-pressure studies of simple ethers

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Ethers are the group of compounds widely used in chemical synthesis, pharmacy, cosmetics, rubber, plastics and other industries. Our study focused on two simple examples from this group – dimethyl- (DME) and dipropyl-(DPE) ethers. The low-temperature studies of DME revealed that it crystallizes at 130 K in the tetragonal space group P42/n [1]. However the structure of dipropyl ether is not known yet. Varied thermodynamical conditions can significantly change the crystal structure and conformations of compounds, as well as their composition and reactivity [2,3]. Therefore we performed the high-pressure studies of dimethyl- and dipropyl- ethers in aim to determine the crystal structures, to study the ability of these compounds for transformation and to analyze the weak intermolecular interactions, which are responsible for molecular arrangement in the crystals.


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