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New polymorph form of dexamethasone acetate

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Abstract: A new monohydrated polymorph of dexamethasone acetate (**DEX-II**) was crystallized and its crystal structure characterized. The different analytical techniques used for describing its structural and vibrational properties were: single crystal (SCXRD) and polycrystal (PXRD) X-ray diffraction, solid state nuclear magnetic resonance (solid-state NMR), infrared spectroscopy (IR). A Hirshfeld surface (HS) analysis was carried out through self-arrangement cemented by H-bonds observed in this new polymorph. This new polymorph form appeared because of self-arrangement via classical hydrogen bonds around the water molecule.

Keywords: Polymorph, Crystal structure, Molecular modelling, X-ray powder diffractometry and Crystallization

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