Crystal Structure of Pyridinium Periodate

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Pyridinium Periodate, Crystal Structure

The crystal structure of the room-temperature ferroelectric phase of pyridinium periodate $[C_6H_5NH]^+[IO_4]^-$ has been determined by X-ray diffraction as orthorhombic, space group $Cmc2_1$ with $a = 8.347(2)$, $b = 7.270(2)$, $c = 12.732(3)$ Å and $Z = 4$. It was refined to $R1 = 0.0281$ $wR2 = 0.0762$ for 389 absorption-corrected reflections. The structure comprises isolated IO_4 tetrahedra linked together by disordered pyridinium cations involved in a network of bifurcated hydrogen bonds. The average I-O distance is found to be 1.75(1) Å.

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