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Crystal and Molecular Structure of the Yellow Form of Chloro(2,2':6',2''-terpyridine)platinum (II) chloride dihydrate, [Pt(terpy)Cl]Cl · 2H<sub>2</sub>O

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**Abstract:** The synthesis, characterization, and X-ray crystal structure of the yellow dimorph, [Pt(terpy)Cl]Cl · 2H<sub>2</sub>O, are reported. The yellow acicular crystals are monoclinic: space group P2<sub>1</sub>/n, a = 6.908(3) Å, b = 17.06700(11) Å, c = 13.8390(10) Å, β = 98.607(4)°, and D<sub>calc</sub> = 2.204 Mg m<sup>-3</sup> for Z = 4. The cation consists of platinum coordinated to tridentate terpyridine ligand and to chloride ion. The coordination geometry is essentially square-planar with distortions arising from the constraints of the terpyridine ligand. Bond distances are within the acceptable limits of predicted values. The cations stack in a head-to-tail orientation with an intermolecular Pt-Pt distance of 3.39 Å.

**Key Words:** X-ray structure, terpyridine, platinum, dimorph, complex.

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