The Reduction of Pyridine to 1,4-Dihydropyridine by Lithiumtetrahydroborate in the Presence of Water

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In the presence of water lithium tetrahydroborate is capable of reducing pyridine to 1,4-dihydropyridine. The product, lithiumtetratetakis(pyridine) tetrakis(1,4-hydropyridyl)borate, was isolated and characterized by NMR and IR spectroscopy and single crystal X-ray diffraction. \([\text{Li(py)}_4][\text{B(pyH)}_4 \cdot 2(1,4\text{-dioxane})\text{ crystallized in space group } P4_2/n, Z = 2. Similarly, NaBH}_4\) can also reduce pyridine in the presence of water and equivalent amounts of LiCl or ZnCl\_2.

Key words: Reduction of Pyridine, Tetrakis(hydropyridino)borate, X-Ray Structure