

Supramolecular Organization of Organoammonium Squarates

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Syntheses, thermal behavior, and IR data of three hydrogen squarates, Hsq^- , with 2-(acetyl-amino)-4-methylpyridinium, $[(\text{C}_8\text{H}_{11}\text{N}_2\text{O})(\text{HC}_4\text{O}_4)]$ (**1**), 2-carboxamido-pyridinium, $[(\text{C}_6\text{H}_7\text{N}_2\text{O})(\text{HC}_4\text{O}_4)]$ (**2**), and 2-methylpyridinium cations, $[(\text{C}_6\text{H}_8\text{N})(\text{HC}_4\text{O}_4)(\text{H}_2\text{O})]$ (**3**), and one squarate, sq^{2-} , with 2-amino-4-methyl-pyrimidinium cations, $[(\text{C}_6\text{H}_9\text{N}_2)_2(\text{C}_4\text{O}_4)]$ (**4**) are reported. The crystal structures of **1** and **4** have been studied. The compounds decompose in two thermal stages: (i) release of organic base, (ii) decomposition of squarate. Crystallographic analyses show that **1** and **4** have S_6 , $R_2^2(10)$ $R_2^2(9)$ $R_2^2(7)$ rings. The hydrogen bonding motifs formed by the hydrogensquarate anions interact with the ammonium cations through $\text{N-H}\cdots\text{O}$ hydrogen bonds and give rise to predominantly layered structures, which also exhibit three-dimensional connectivity.

Key words: Squaric Acid, Organic Amine, Thermal Decomposition