Crystal Structure, NQR and DSC Studies of Tetrabromocadmates(II): 
$[4\text{-H}_2\text{N}C_5\text{H}_4\text{NH}]_2\text{CdBr}_4 \cdot \text{H}_2\text{O}$ and $[2,3,5,6-(\text{CH}_3)_4\text{C}_4\text{N}_2\text{H}_2]\text{CdBr}_4$

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4-Aminopyridinium tetrabromocadmate(II) monohydrate (1) crystallizes in the orthorhombic space group Pbcm with $a = 6.876(2)$, $b = 14.089(2)$, and $c = 18.845(2)$ Å, $Z = 4$, $T = 296$ K. In the crystal structure, a [CdBr$_4$]$^{2-}$ anion, a 4-aminopyridinium cation, and a water molecule are alternately connected into chains by hydrogen bonds N–H···Br and O–H···Br. 2,3,5,6-Tetramethylpyrazinium tetrabromocadmate(II) (2) crystallizes in the orthorhombic space group $P2_12_12_1$ with $a = 14.640(12)$, $b = 15.615(7)$, $c = 6.686(5)$ Å, $Z = 4$, $T = 296$ K. In the crystal structure, a [CdBr$_4$]$^{2-}$ anion and a 2,3,5,6-tetramethylpyrazinium cation are interconnected by bifurcated hydrogen bonds N–H···2Br and form infinite chains. $^{81}$Br NQR spectra with three lines with an intensity ratio of 1:1:2 ($77$ K $\leq T \leq$ ca. 325 K) and four lines with an intensity ratio of 1:1:1:1 ($77$ K $\leq T \leq$ ca. 330 K) were observed for crystalline 1 and 2, respectively, which are consistent with the crystal structure data. DSC measurements showed the existence of thermal anomalies at high temperatures in both 1 and 2.

Key words: Crystal Structure, Tetrabromocadmate(II), DSC, NQR