Isolated versus Condensed Anion Structure V: X-ray Structure Analysis and ^{81}Br NQR of *t*-butylammonium tribromocadmate(II)-1/2 water, *i*-propylammonium tribromocadmate(II), and *tris*-trimethylammonium heptabromodicadmate(II)

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The crystal structures of the condensed bromocadmate anions with chains built of $[CdBr_3]_\infty$ were determined by X-ray structure analysis at 300 K. In addition, the temperature dependence of the ^{81}Br NQR frequencies was observed. $[(t\text{-}C_4H_9NH_3)CdBr_3]_2\text{-}H_2O$ (**1**) crystallizes with a double Br bridged chain (monoclinic, P2/c, $Z = 4$, $a = 1963.4(8)$, $b = 887.7(4)$, $c = 1432.1(6)$ pm, and $\beta = 110.66(2)°$). Six ^{81}Br NQR lines are observed at temperatures between 77 and 330 K. $(i\text{-}C_3H_7NH_3)CdBr_3$ (**2**) crystallizes with a triple Br bridged chain (orthrhombic, Pbca, $Z = 8$, $a = 1975.4(6)$, $b = 1415.8(4)$, $c = 690.1(2)$ pm). (**2**) shows three ^{81}Br NQR lines at temperatures between 77 and 193 K. A phase transition occurs at 224 K. The structure of $[(CH_3)_3NH]_3Cd_2Br_7]$ (**3**) was redetermined. (**3**) consists of a triple Br bridged chain and a discrete $[CdBr_4]$ tetrahedron (hexagonal, $P6_3mc$, $Z = 8$, $a = 1483.5(2)$, $c = 685.7(5)$ pm). The structure of (**3**) is identical to the one reported by Daoud, Perret, and Dusausoy, Acta Crystallogr., **B35,** 2718 (1979). Three ^{81}Br NQR lines are observed at temperatures between 77 and 243 K.