

Crystal Structure of Bis(dipropylammonium) Tetrachloro-Dimethyl-Tin(IV)

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The property of organotin compounds, R_2SnX_2 (X = halogen), as Lewis acids has been utilized to prepare tetrahalodiorganoastannates, $[R_2SnX_4]^{-2}$.¹ A search of the Cambridge Structural Database (CSD) shows that 17 structures including $[R_2SnX_4]^{-2}$ anions were deposited. Some examples are as follows: bis(dimethylammonium) tetrachloro-dimethyl-tin(IV) (CSD refcode ERIPIF; Diop *et al.*, 2011)², bis(4-nitroanilinium) tetrachloro-dimethyl-tin(IV) (CSD refcode HAXQIH; Gholivand *et al.*, 2005)³ and bis(2-aminopyridinium) dimethyl-tetrachloro-tin(IV) (CSD refcode GEKDEF; Valle *et al.*, 1988)⁴. Here, the structure of a new organotin(IV) compound with formula $[(C_3H_7)_2NH_2^+]_2[Sn(CH_3)_2Cl_4]^{-2}$ is reported. The crystal belongs to space group $P2(1)/n$ with cell dimensions $a = 10.9199(3)$ Å, $b = 13.1459(3)$ Å, $c = 17.8167(5)$ Å, $\alpha = 90.00^\circ$, $\beta = 107.328(3)^\circ$, $\gamma = 90.00^\circ$; the final R value is 0.0306. The cations and anions are aggregated in a two-dimensional arrangement along the ab plane, produced by intermolecular $[N-H]_2 \dots Cl$ hydrogen bonds. Each $[Sn(CH_3)_2Cl_4]^{-2}$ anion is connected to four dipropylammonium cations through the hydrogen bonds noted (Fig. 1).

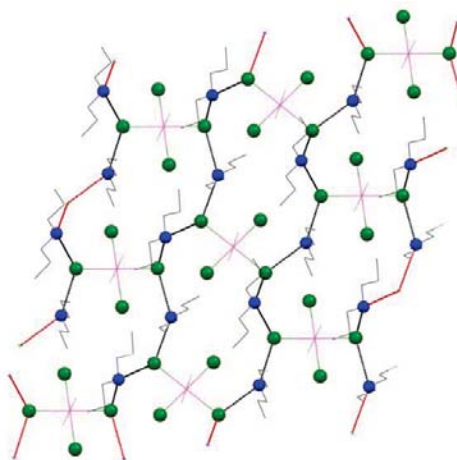


Fig. 1 The 2-D arrangement of cations and anions in the title structure is represented, produced by intermolecular $[N-H]_2 \dots Cl$ hydrogen bonds.

References

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