New Polymeric Barium(II) 2,2'-diphenyldicarboxylate Complex

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A multidentate ligand such as 2,2'-diphenyldicarboxylic acid (H_2dpdc) is a good candidate for the construction of coordination polymers. In the crystal structures of transition metal complexes with H_2dpdc, the ligand exhibits several kinds of coordination modes [1-3]. Owing to the higher coordination number, the reactions of H_2dpdc with alkaline-earth metals may generate polymers with different coordination modes. To the best of our knowledge, alkaline-earth 2,2'-diphenyldicarboxylate complexes have never been reported.

A new barium(II) complex $[Ba(Hdpdc^-)_2(H_2O)_2]$ has been synthesized. It crystallizes in the monoclinic space group $P2_1/n$. The barium atoms are nine coordinated and the coordination geometry around them can be best described as a distorted capped square antiprism. The geometry of the two monoanions is similar to those found in the pure acid [4].The three-dimensional structure is polymeric and consists of infinite chains of face-sharing Ba polyhedra, running parallel to the [010]axis. The Ba..Ba distances across these chains are 4.139(2) Å.

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