Magnesium Anthranilate Dihydrate

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Magnesium, Hexa(aquo) Complex of Magnesium, Anthranilate Anion

The reaction mixture of magnesium chloride with two equivalents of potassium anthranilate [K^+ $Anth^-$] in water gives on cooling to 0 °C a 60% yield of a precipitate which after drying in a vacuum has the composition $[Mg(H_2O)_6](Anth)_2$ (**1**). Recrystallization from hot water affords an octahydrate identified as $[Mg(H_2O)_6](Anth)_2(H_2O)_2$ (**2**) in a single crystal X-ray diffraction study. Contrary to findings for the related calcium, strontium and barium compounds, in the magnesium compound the anthranilate anions are not part of the coordination sphere of the metal atom. Thermal degradation of **1** or **2** at 125 °C gives the anhydrous product $[Mg(Anth)_2]$, **3**. Alternative preparative routes employed in previous studies gave only anhydrous material. The result of the present investigation confirms the outstanding stability of the hexa(aquo) complex of magnesium, as compared to the hydrates of the larger alkaline earth metals, in the presence of potential bioligands.