Vibrational spectra and normal coordinate analysis of diamminemercury(II) chloride with 14N/15N and H/D isotopic substitution

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The IR and Raman spectra of solid diamminemercury(II) chloride with 14N/15N and H/D isotopic substitution have been measured. The spectra have been interpreted assuming D3d symmetry for the [Hg(NH3)2]2+ cations which have a linear framework structure. The skeletal metal-ligand modes ?as(HgN) and °as(NHgN) in the IR spectra were confirmed by the observed isotopic shifts. A normal coordinate analysis for the three isotopic compounds has been carried out, based on a modified valence force field and on a modified Urey-Bradley force field. © 1981.