Potentiometric and spectroscopic studies on oxovanadium(IV)complexes of salicylic acid and catechol and some derivatives.

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The interaction of oxovanadium(IV) with ligands containing phenolate and carboxylate donors, such as salicylic acid, catechol, 2,*x*-dihydroxybenzoic acids (*x*= 3–6), and 3,4-dihydroxybenzoic acid has been studied in aqueous solution by means of potentiometric and spectroscopic (electronic absorption, e.s.r., and electron nuclear double resonance) techniques. Over the low pH range the salicyclic acid-type mode of co-ordination predominates, while the catechol type is preferred in basic media. A mixture of these donor sets is observed in the ternary oxovanadium(IV)–salicylic acid-catechol and binary oxovanadium(IV)-2,3-dihydroxybenzoic acid systems. Besides monomeric complexes, dinuclear species are also formed by the potentially ambidentate dihydroxybenzoic acid derivatives over the intermediate pH range. In the latter complexes both CO_2^- and O^- groups take part in metal bridging.

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