

NMR Spectroscopic Studies of Vanadium-peroxomalate Complexes in solution

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Vanadium complexes are particularly susceptible to external influence since the vanadium atom is small and readily accommodate several coordination geometries.

So it is important to understand how various factors affect the structure and properties of vanadium complexes.

The novel vanadium complexes, potassium (malato)oxoperoxovanadate(V) complex have been synthesized and the structure of the complex was characterized by solution (¹H, ¹³C, ⁵¹V) NMR spectroscopies.

Then the results were compared with those of potassium (malato)oxovanadate(V) complex.

⁵¹V NMR Spectra showed difference of chemical structure and coordination environment between two complexes.

It showed that V(V)-malate complex had 6 coordination number and octahedral structure and peroxo V(V)-malate complex had 7 coordination number and pentagonal bipyramidal structure.