

EPR Spectra of VO^{2+} Doped in $\text{Na}_2\text{C}_4\text{H}_4\text{O}_6$ Single Crystals

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Z. Naturforsch. **59a**, 669 – 673 (2004); received June 22, 2004

EPR spectra of VO^{2+} ions in di-sodium tartrate, $[\text{Na}_2\text{C}_4\text{H}_4\text{O}_6]$, single crystal and powder spectra have been studied at room temperature. The angular variation of the EPR spectra has shown that three different VO^{2+} complexes are located in different chemical environments, and each environment contains two magnetically inequivalent sites. The spin Hamiltonian parameters are determined, and these parameters have been used to assess the bonding coefficients of the VO^{2+} ion in the di-sodium tartrate lattice. The parallel and perpendicular components of axially symmetric g and hyperfine tensors are evaluated. The results are discussed.

Key words: EPR; Vanadil Ion; Di-sodium Tartrate.