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XRD, EDAX, FE-SEM and Raman spectroscopic studies of disodium trans-diaquabis(oxalato)cobaltate(II) hexahydrate

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Abstract: The crystals of disodium trans-diaquabis(oxalato)cobaltate(II) hexahydrate $\{Na_2[Co(C_2O_4)_2\ (H_2O)_2]\cdot 6H_2O\}$ were characterized by X-ray powder diffraction (XRD), quantitative elemental analysis of EDAX, field emission scanning electron microscopy (FE-SEM) and Raman Spectroscopy. This material crystallizes in the triclinic system with space group $P\bar{1}$ and shows one-dimensional (1D) chain structure. The elements present in the grown crystal were confirmed by Energy Dispersive X-ray Analysis. The microstructural features on the surface of the single crystal were determined using a field emission scanning electron microscope. The polycrystalline nature of the material was confirmed using powder XRD. The vibrational assignments of the material were confirmed using Raman spectroscopy.
Keywords: Inorganic material; Morphology; X-ray diffraction; Raman spectroscopy.

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