Crystal Structure and Vibrational Behaviour of Tetraaqua-di(nicotinamide)M(II)-Saccharinates, with M(II) = Co, Ni, Zn

Eduardo E. Castellano\textsuperscript{a}, Oscar E. Piro\textsuperscript{b}, Beatriz S. Parajón-Costa\textsuperscript{c}, and Enrique J. Baran\textsuperscript{c}

\textsuperscript{a} Instituto de Física de Săo Carlos, Universidade de Săo Paulo, 13560 Săo Carlos (SP), Brazil
\textsuperscript{b} Departamento de Física and Instituto IFLP (CONICET), Facultad de Ciencias Exactas, Universidad Nacional de La Plata, 1900 La Plata, Argentina
\textsuperscript{c} Centro de Química Inorgánica (CEQUINOR, CONICET/UNLP), Facultad de Ciencias Exactas, Universidad Nacional de La Plata, C. Correo 962, 1900 La Plata, Argentina

Reprint requests to Prof. Dr. E. J. Baran. E-mail: baran@quimica.unlp.edu.ar

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Cobalt(II), Nickel(II), Zinc(II), Aqua(nicotinamide)metal(II)-Saccharinates

The crystal structures of $[\text{M(nic)}_2(\text{H}_2\text{O})_4](\text{sac})_2$ (nic = nicotinamide; sac = saccharinate anion) with M = Co(II), Ni(II) and Zn(II), have been determined at 116 K by single-crystal X-ray diffractometry. The compounds crystallize in the triclinic space group $P\bar{1}$ with $Z = 1$, and the M(II) cations present a slightly distorted $\text{MN}_2\text{O}_4$ octahedral environment, with equatorially coordinated water molecules and axially pyridine N-bound nicotinamide ligands. The saccharinate anions act as counteranions, and are not part of the first coordination sphere. Some comparisons with related structures have been made and the most important features of their IR spectra discussed.