

Protolytic equilibria in water solutions of nicel(II) salts, ethylenediaminetetraacetic acid and diaminoethan

© Victor I. Kornev,* and Nadezhda S. Buldakova⁺

Department of Inorganic and Analytical Chemistry. Udmurt State University.

Universitetskaya St., 1. Izhevsk, 426034. The Udmurt Republic. Russia.

Phone: +7 (3412) 91-64-34. E-mail: nah@uni.udm.ru

*Supervising author; ⁺Corresponding author

Keywords: complex compounds, coordination number, complex, ligand, ethylenediaminetetraacetic acid, diaminoethan, nicel(II), stability constant.

Abstract

Equilibria in triple systems containing nicel(II) salts, as well as 1,2-diaminoethan, ethylenediaminetetraacetic acid were studied by spectrophotometry and potentiometry with NaClO₄ as supporting electrolyte (I = 0.1) at T = (20±2) °C. The molar and proton compositions of heteroligand complexes and polynuclear complexes and the pH ranges of their existence were determined. The stability constants of these complexes were calculated. The mole fractions of the complexes with reference to pH were characterized. Some mathematic models which provide the opportunity to evaluate the share of accumulation of complex compounds and find those that reflect the actual situation, were used for the analysis of the experimental results.