

Abstract

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Title of Thesis Osmolality of parenteral preparations. Phosphates.

The aim of this work was to prepare a series of solutions of sodium acid phosphate dihydrate at concentrations from 20 to 1000 mg/kg or mmol/l. Density at temperatures 15, 20, 25, 30, 35 and 40°C and osmolality of all solutions was measured. A non-linear relationship was detected between the solution density and temperature. The relationship of osmolality on molal and molar concentration of substance was described by a quadratic equation. The density of solutions at 25°C were performed for conversion of molal to molar concentration of the solution and vice versa. The molal osmotic coefficient was determined from the solution osmolality, whose value declines at increasing concentrations of the solute. From the methods of osmolarity estimation presented in USP, the most accurate one employing a partial specific volume of the solute was detected for sodium acid phosphate.