

Conductometric determination of formation constants of tris(2-pyridyl)methylamine and titanium (III) in water-acetonitrile mixture.

ABSTRACT

A conductance study of the interaction between titanium (III) cation and tris(2-pyridyl)methylamine (tpm), in water-acetonitrile mixtures was carried out at various temperatures. The formation constants of the resulting 1:1 complexes were determined from the molar conductance-mole ratio data. The stability constants of 1:1 (M:L) complexes of tpm with titanium (III) cation, the Gibbs standard free energies (ΔG°), the standard enthalpy changes (ΔH°) and the standard entropy changes (ΔS°) for the formation of these complexes in acetonitrile-water (AN-H₂O) binary mixtures have been determined conductometrically. The stability constants of the complexes were obtained from fitting of molar conductivity curves using a computer program, GENPLOT.

Keyword: Acetonitrile-water; Conductometry; Titanium (III); Tris(2-pyridyl) methylamine.