Solvent mediator studies on barium ion-selective electrodes based on a sensor of the tetraphenyl-borate salt of the barium complex of a nonylphenoxypoly(ethyleneoxy)ethanol. Jaber, A. M. Y.; Moody, G. J.; Thomas, J. D. R. Chem. Dep., Univ. Wales Inst. Sci. Technol., Cardiff, UK. Analyst (Cambridge, United Kingdom) (1976), 101(1200), 179-86. CODEN: ANALAO ISSN: 0003-2654. Journal written in English. CAN 85:28130 AN 1976:428130 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

Abstract

The effects of nitroarom. solvent mediators were studied on the properties of the Ba2+-selective electrode which contains a sensor based on the neutral carrier complex of Antarox CO-880 contg. 12 ethylene oxide units and 2 mole BPh4- per mole Ba2+. 2-Nitrophenyl octyl ether and di-2-nitrophenyl ether (I) used with the sensor in a PVC matrix membrane give functional electrodes, but those with I are far superior with good selectivity and lifetimes of .apprx.30 days. Ba2+-selective electrodes with the sensor and mediator in liq. membranes were made for a wider range of nitroarom. compds. The electrodes made with 0.40 g of a satd. soln. of the complex in I were used as indicator electrodes for potentiometric titrn. of SO42- with Ba2+. S in org. compds. was detd. by std. combustion, absorbing the gaseous products in aq. H2O2, adding EtOH, and titrating with std. 0.02M Ba(ClO4)2 in 80% EtOH with the PVC matrix membrane electrode. Recoveries were 100.25% S.