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Abstract: Promethazine hydrochloride selective electrodes were constructed based on promethazine-phosphotungstic acid ion pair in PVC matrix membrane. The plasticizers used were di-butyl phosphate (DBP), tri-n-butyl phosphate (TBP), o-nitro phenyl octyl ether (ONPOE), and di-n-butyl phthalate (DBPH). The electrodes based on DBP, TBP, and ONPOE gave the same linear range between 1×10^{-4} and 1×10^{-1} M, while the one based on DBPH ranged between 5×10^{-4} and 1×10^{-1} M. The slopes for linear range ranged from 40 to 56 mV/decade with correlation coefficients lying between 0.9984 and 0.9993. The best detection limit was 2×10^{-5} M for the electrode based on DBPH. The standard deviation of potential drift ranged from $\mu\text{m}1$ to $\mu\text{m}9$ mV. The measurement interferences in the presence of Li^+ , Na^+ , K^+ , Mg^{2+} , Ca^{2+} , Zn^{2+} , Fe^{3+} , Cr^{3+} , and Al^{3+} were studied using separate and match methods for selectivity coefficient determination. The pH and life time of the electrodes were also studied.

Key Words: Promathazine-HCl selective electrodes, phosphotungstic acid, promethazine determination

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