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论文

PVC膜离子缔合型有机碱阳离子选择电极响应规律探讨

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摘要:

以硅钨酸等六种未转型的定域体试剂为活性物的电极,测试十几种有机碱,并与以离子对为活性物的膜电极比较,得出定域体与待测离子缔合力强弱是决定离子缔合阳离子选择电极响应性能的主要因素的结论。提出预先筛选电活性物的方法——目视比浊法。找出未转型的硅钨酸为活性物、邻苯二甲酸二(2-乙基己基)酯为增塑剂的膜电极响应性能较佳,对某些有机碱响应的线性宽于或下限低于文献值。

关键词: 离子缔合型电极 选择性系数

STUDY OF THE RESPONSE CHARACTERISTICS OF PVC MEMBRANE ION ASSOCIATE TYPE ELECTRODES FOR ORGANIC BASE CATIONS

XJ Kang and CY Wang

Abstract:

A new type of ISEs which only uses alkaloid precipitants in place of ion. pairs as active materials in polyyinyl chloride was recommended. The characteristics of the electrodes sensing over ten kinds of organic bases have been studied in comparison with those based on ion pairs. It can be concluded that the response characteristics of ion-associate type ISEs depend on the strength of the association between ion-exchange site and principal ions. Visual turbidimetry was used to select active materials for ISEs in advance. Among six alkaloid precipitants (silicotungstic acid, tetraphenyl borate, dipierylamine, picric acid, picrolonic acid and Reineckate), silicotungstic acid is the most active material for ion-associate type organic base cation ISEs. With it, the sensor has wider Nernst linearity and lower detection limit than some ion pair based ones in literature.

Keywords: Selectivity coefficients Ion-associate type elctrode

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