

suspension effect

in an ion-selective electrode

An effect which occurs when ion-selective electrodes are used in concentrated, space-filled suspensions while the external reference electrode remains in the supernatant (suspension-free) solution. The suspensions are specifically solvent-swollen ion exchangers or other materials, like soils and clays, that concentrate ions by adsorption and absorption. Space-filled, gravity-packed suspensions act like a second phase and form apparently an interfacial potential difference (PD) with respect to the supernatant. The measured ion activity in the suspension differs from the value in the supernatant by the interfacial PD, and corresponds to a higher value approximating the activity inside the ion exchanger gel. The effect nearly disappears when the outer reference electrode is placed in the same region of the suspension as the sensor electrode. There are some changes in the junction potential differences of the reference electrode, between suspension and supernatant.

Source:

PAC, 1994, 66, 2527 (*Recommendations for nomenclature of ionselective electrodes (IUPAC Recommendations 1994)*) on page 2533