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Titel des Beitrags: An electrochemical cell configuration incorporating an ion conducting membrane separator between reference and working electrode

Abstract: Ionic impurities can significantly interfere with certain electrochem. measurements and should therefore be completely avoided. However, std. ref. electrodes such as the widely used SCE and the Ag/AgCl electrode contain satd. chloride solns. Typically, this chloride soln. is only sepd. from the electrochem. cell electrolyte by a porous glass frit, which still allows chlorides to diffuse through and contaminate the electrochem. system. To avoid this undesired effect, a new electrochem. cell setup is presented here. The modification incorporates an ion conducting membrane that serves to further sep. chloride contg. ref. electrodes from the electrochem. cell, and thereby actively prevents the diffusion of chlorides to the surface of the working electrode. The benefits of this modification, in particular for long-term electrochem. measurements in which the electrodes are positioned closely, is demonstrated by the study of the O redn. reaction (ORR) on polycryst. Pt in both a single- and three-compartment electrochem. cell. [on SciFinder(R)]

Stichworte: Reference electrodes (calomel or silver-silver chloride electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode) Catalysis (electrocatalysis electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode)
membrane separator between ref. and working electrode) Electrolytic cells (electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode) Membranes (ion conducting electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode) Reduction (of oxygen electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode) Electrodes (working electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode) Electrochem cell configuration incorporating an ion conducting membrane separator ref working electrode

Kongresstitel: CAN 151:458311 72-2 Electrochemistry Institut fuer Physikalische Chemie, Technische Universitaet Muenchen, Garching, Germany. Journal; Online Computer File 1452-3981 16887-00-6 (Chloride) Role: OCU (Occurrence, unclassified), OCCU (Occurrence) (contamination; electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode); 7447-40-7 (Potassium chloride) Role: PRP (Properties) (effect of addns.; electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode); 7782-44-7 (Oxygen) Role: OCU (Occurrence, unclassified), OCCU (Occurrence) (electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode); 7440-06-4 (Platinum) Role: TEM (Technical or engineered material use), USES (Uses) (electrode; electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode); 7601-90-3 (Perchloric acid) Role: NUU (Other use, unclassified), USES (Uses) (electrolyte; electrochem. cell configuration incorporating an ion conducting membrane separator between ref. and working electrode)


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