

Title (en)
HALOGEN EVOLUTION WITH IMPROVED ANODE CATALYST

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Application
EP 81301958 A 19810501

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US 14593680 A 19800502

Abstract (en)
[origin: EP0039608A1] A gas generating apparatus and method is described which utilizes a novel catalytic halogen evolving electrode for electrochemical systems, such as an electrolysis cell for the generation of chlorine. The electrochemical cells include a catalytic cathode (34) and an improved catalytic anode (39) positioned on opposite sides of, and bonded to, a solid polymer electrolyte membrane (33). A source of direct current potential between the cathode (34) and the anode (39) and means for removing gas from at least one of the electrodes are provided. The improved catalytic anode (39) is an alloy of ruthenium oxide and manganese oxide. In one embodiment, chlorine is electrolytically generated by providing a catalytic cathode (34); providing a catalytic chlorine evolving anode (39) wherein the chlorine evolving anode comprises ruthenium oxide and manganese oxide; positioning a solid polymer electrolyte ion transporting membrane (33) between the cathode and the anode, the cathode (34) being bonded to one surface of the membrane (33) and the anode (39) being bonded to the other surface of the membrane (33); and providing a direct potential between the cathode (34) and the anode (39) and supplying brine to one of the electrodes to be acted on electrochemically to evolve chlorine at the anode. By adding the manganese oxide to the ruthenium oxide, the ruthenium oxide is stabilized, and there is substantial improvement in anode life in an electrolysis cell when the ruthenium oxide/manganese oxide catalyst material is used as an anode therein without sacrifice to cell efficiency and cell voltage.

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