Electrochemical sensor for the quantitative determination of hydrazine in an aqueous medium, the cell of which contains electrodes separated by a separator made of an ion-exchange membrane. The sensor operates on an amperometric principle; the sensor cell is designed as a tablet in which the electrodes and the separator - made of a cation-exchange membrane - are combined through layer-by-layer compression. The first electrode is designed as a porous structure using electrocatalytic materials. The separator is made from a mixture of a polymeric binder powder of the ФТ-4МБ fluoroplastic grade and a low-temperature proton-conducting solid electrolyte. The second electrode is made from a mixture of an electrically conductive material stable in the electrolyte medium, a low-temperature proton-conducting solid electrolyte, and manganese (IV) oxide (ЕДМ -2).