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ELECTROCHEMICAL METHOD TO REMOVE FLUORINE FROM WATERS. THE STUDY OF ITS MECHANISM

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The removal of fluorine from waters is an important object of investigation in a number of regions. The known chemical methods are applied to waters with high fluoride content. However, it is advisable to carry out both the final treatment of these waters and the removal of fluorine from underground waters by the method of electrochemical coagulation on the aluminium electrodes (in these cases the anion's balance should be strictly regulated).

The processes of complex formation and sorption of fluorine by aluminium hydroxide are based on IR-spectroscopy and thermal gravimetry. It has also been stated that outerspheric hydroxo - fluoride aluminium complexes are formed under low initial concentrations of fluorine ions. The influence of the anode material on the passivating velocity of fluorine removal has been investigated. The conditions allowing to stabilize the electrical parameters on the electrode block functioning during a long period of time have been selected. The technology of purification of chloride-bicarbonate-sulphate underground waters by electrochemical coagulation has been worked out. This method allowed to obtain water with fluorine concentration not exceeding the standard