

Evaluation of Relationship between Conductivity and Radioactive Concentration in Tritiated Water

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Conductivity represents an important parameter for determination of water purity. In case of tritiated water, the β radiation field lead to formation of ionic species which significantly affect this parameter.

Samples of tritiated water were prepared using ultra pure water ($< 18 \mu\text{S}$ conductivity) and small aliquots of double distilled HTO with 37 GBq/ml.

The conductivity of obtained tritiated water was measured using an INOLAB Conductivity-meter with TeraCon 325 and LR 325 conductivity sensors.

The radioactivity of obtained HTO was measured by Liquid Scintillation Counting and also by Triple to Double Channel Ratio (TDCR) method.

The study carried out using solutions of tritiated water with radioactive concentration in range of 1 GBq/l.... 1.5 TBq/l.