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Optimization of a simplified radiochemical method based on Sr[®]-resin for measurement of 90-Sr in nuclear waste

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Abstract_Title OPTIMIZATION OF A SIMPLIFIED RADIOCHEMICAL METHOD BASED ON SR[®]-RESIN FOR MEASUREMENT OF 90-SR IN NUCLEAR WASTE

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Abstract_Body As a characteristic fission product with a half-life of 28.8 years, Sr-90 must be quantified in nuclear waste. Prior to its nuclear measurement, it is necessary to separate it from its matrix and interferences with radiochemical method. The extraction chromatographic resin, Sr-resin[®], developed by Eichrom in the 1990's is widely applied. Its efficiency has been demonstrated for a wide range of samples even if pre-treatments are necessary depending on the nature of the sample. For nuclear waste, difficulties can be encountered especially with samples with high Pu content. A precipitation with ammonia can be used but this can lead to a Sr loss depending on the experimental conditions (ex: digestion step with HF acid or not) and interferences present. In this presentation, the robustness of an alternative pre-treatment using TRU-resin[®] will be highlighted. It has been proven to be efficient on all the nuclear waste samples investigated in the study.

Session Track 5. Analytical Methods of Fission Products and Fuels

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