RES N°168
SEPARATION OF 99-Mo FROM 132-Te USING THIOUREA AS COMPLEXING AGENT. APPLICATION TO THE SEPARATION OF 99-Mo FROM THE FISSION PRODUCTS.

Mestnik, S.A.C. & Silva, C.P.G.

INSTITUTO DE PESQUISAS ENERGETICAS E NUCLEARES - CNEN/SP SAO PAULO - BRASIL

A radiochemical method to isolate 99-Mo from 132-Te both produced in the fission of 235-U has been developed. The method is based on the formation of the a cationic complex of tellurium with thiourea in acid medium which is retained (98.7 ± 0.5)% on a cation exchange resin (Dowex 50W-X8, 100-200 mesh) while (99.8 ± 0.05)% 99-Mo passes through it, due to the non formation of such complex in the same experimental conditions. The radionuclidic purity of the separated 99-Mo verified by using gamma spectrometry was found to be suitable for the preparation of 99-Mo-99mTc generators. The retention of 99-Mo on an alumina column as function of pH was investigated. The best pH range for this purpose was found to be between 4.0 - 4.5. The 99-Mo- 99mTc generator was prepared. The elution of 99m-Tc was carried out with physiologic saline solution. The radionuclidic purity of the eluate was found suitable and the product can be used for Nuclear Medicine applications.

11º Congreso de la Asociacion latinoamericana de sociedades de Biologia y medicina nuclear, Santiago, Chile, 08-11 de Aut., 1989.