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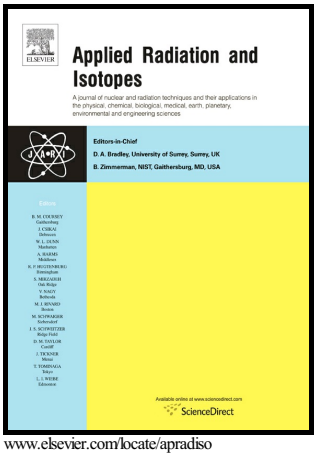

www.elsevier.com/locate/apradiso

PII: S0969-8043(17)30355-X
DOI: http://dx.doi.org/10.1016/j.apradiso.2017.07.023
Reference: ARI7975

To appear in: *Applied Radiation and Isotopes*

Received date: 10 March 2017
Revised date: 4 July 2017
Accepted date: 5 July 2017

Cite this article as: K. Mitev, P. Cassette, I. Tartès, S. Georgiev, I. Dimitrova and D. Pressyanov, Diffusion lengths and partition coefficients of ^{131m}Xe and ^{85}Kr i Makrofol N and Makrofol DE polycarbonates, *Applied Radiation and Isotopes* http://dx.doi.org/10.1016/j.apradiso.2017.07.023

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Abstract

This work presents the results of an experimental study of the Makrofol® N and Makrofol® DE polycarbonate foils absorption properties of ^{85}Kr and ^{131m}Xe . The diffusion lengths of ^{85}Kr and ^{131m}Xe in both types of foils are determined. The partition coefficients of ^{85}Kr from air and water and that of ^{131m}Xe from air in Makrofol® N are determined. The partition coefficients of ^{85}Kr from water and ^{131m}Xe from air in Makrofol® DE are also determined. The parameters are determined for T=22 °C and allow for the full characterisation of sorption and desorption of ^{85}Kr and ^{131m}Xe in the foils at this temperature. The results from this study highlight the remarkable absorption ability of Makrofol® and especially of the Makrofol® N foil and show that it surpasses the Makrofol DE® foil not only as a Rn absorber, but also as Kr and Xe absorber.

Keywords: Polycarbonate, ^{131m}Xe, ^{85}Kr, Diffusion, LSC