J.Basrah Researches. Vol.28. part 3,185-191 (2002)

The Response of PM – 355 To Gamma Radiation

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Abstract

The behavior of PM-355 to Gamma radiation was studied from low doses up to 24 Mard. The discrimination dose, which is related with registration of particles, has been found as 1 Mard. The Registration of alphas and fission fragments in preirradiated samples was also studied. The registration length for both alphas and fission fragments is shortend as the background Gamma dose augments. A comparison of the behavior of PM-355 with other detectors of this kind were made.

Introduction

The possibility of using plastics as detecting materials has been considered in view of the chemical etch-rate dependence on absorbed physics experiments it is important to know their characteristic features as sensitivity, efficiency and resolution. Such studies have been made for a largenumber of detectors in the attempt to comprehend the basic properties of registration of registration of the parieles[1-5]. Therefore all new detectors of this kind appear to have the same importance. The special features of registration found[1] for the plastic detector must correlate with a high sensitivity in absorbed dose. Experimental results of Blatchley and co-workers[6] obtained in relatively low levels of gamma dose confirm the above assumption for the plastic detectors. Here we have examined PM-355 in a large regior of absorbed gamma dose and particulary in the very low dose below 2 Mrad. It was found that PM-355 has a more complicated behavior in gamma dose relative to other plastic detectors Such as CR-39, CA-80-15, Macrofo., Lexan, etc. Finaly, the results from gamma dose, are related to the particle registration (alpha and fission fragments) in PM-355.