

A STUDY ON EXTRACTION OF THORIUM WITH PMBP-LOADED POLYURETHANE

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ABSTRACT

PMBP-loaded polyurethane foam as a extractant for thorium nitrate from aqueous solution is investigated. Open-cell polyurethane foam is proved to be effective as supporting material for chelating extraction agent. Thorium nitrate can be quantitatively extracted by PMBP-loaded polyurethane foam over a wide pH range. The effect of equilibrium time, pH of the solution, thorium concentration, various anions and flow rate on the extraction efficiency of thorium is examined. A technique of extraction chromatography column with PMBP-loaded foam cylinder is developed for trace thorium analysis from bulky water samples.

Key words PMBP, polyurethane foam, thorium, extraction, trace analysis, preconcentration.

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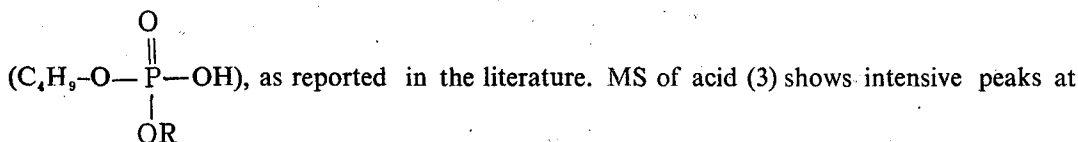
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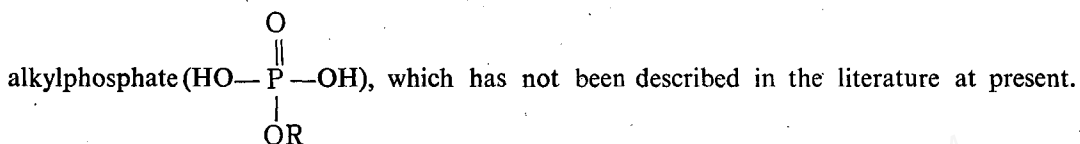
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numbers of 169, 113, which indicates the similarity of the structure acid (2) to dialkylphosphate



mass numbers 127, 109, which indicates the similarity of the structure of acid (3) to mono-



GC-chemical ionizing MS and GC-electronic ionizing MS identification are applied in order to obtain molecular formula and molecular weight. Before analysis the samples are methylated by means of CH_3N_2 .

Analysis of acid (2) indicates that there are seven dialkyl long chain acidic phosphates. In acid (3) there are five monoalkyl long chain acidic phosphates.

Finally a mechanism for the formation of the strong complexes acid (2) and acid (3) through radicals of HDBP, H_2MBP and $\dot{\text{R}}$ is proposed.

Key words Degradation, TBP, Dodecane, Complexing agent, Hf index.

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