

Title (en)

Process for recovering uranium (VI) from phosphoric-acid solutions.

Title (de)

Verfahren zum Gewinnen von Uran (VI) aus Phosphorsäure enthaltenden Lösungen.

Title (fr)

Procédé de récupération de l'uranium (VI) présent dans des solutions d'acide phosphorique.

Publication

EP 0053054 A1 19820602 (FR)

Application

EP 81401686 A 19811023

Priority

FR 8024253 A 19801114

Abstract (en)

[origin: ES8206387A1] Process for the recovery of uranium (VI) present in a phosphoric acid solution by contacting the latter with an organic solvent able to extract uranium, the organic solvent comprising a system of extractants constituted by a neutral phosphine oxide and an acid organophosphorus compound. The process comprises a re-extraction stage for the uranium extracted in the organic solvent, said re-extraction stage being performed in a re-extraction apparatus comprising at least two stages in which the uranium-containing organic solvent is circulated in the said stages by introducing it into the first stage, an aqueous ammonium carbonate solution is circulated in countercurrent with respect to the organic solvent in the said stages by introducing it into the final stage in a quantity such that it represents 50 to 80% of the stoichiometric quantity necessary for neutralizing the acid organophosphorus compound and for transforming the uranium present in the organic solvent into uranyl ammonium tricarboxylate, ammonia being added in the form of a gas or an aqueous solution to the ammonium carbonate solution circulating in the first stage in order to keep the pH of the final stage as a value between 8 and 9.5 and preferably between 8 and 8.5.

Abstract (fr)

L'invention a pour objet un procédé de récupération de l'uranium (VI) présent dans une solution d'acide phosphorique. Selon ce procédé, on met en contact ladite solution avec un solvant organique comprenant un système d'extractants constitués respectivement : par un oxyde neutre de phosphine de formule: <IMAGE> dans laquelle R¹, R² et R³ qui sont identiques ou différents représentent des radicaux alkyle, aryle ou alcoxyalkyle, et par un composé organophosphoré acide de formule: <IMAGE> dans laquelle R<4> et R<5> qui sont identiques ou différents, représentent un radical alkoxyalkyle linéaire ou ramifié comportant au moins une fonction étheroxyde ou un radical aryloxyalkyle.

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C22B 60/02

IPC 8 full level

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Citation (search report)

- [A] FR 1193653 A 19591104 - ATOMIC ENERGY COMMISSION
- [A] FR 1303476 A 19620914 - ATOMIC ENERGY COMMISSION
- [A] FR 2364180 A1 19780407 - WESTINGHOUSE ELECTRIC CORP [US]
- [A] FR 2423545 A1 19791116 - MINEMET RECH SA [FR], et al
- [AD] FR 2442796 A1 19800627 - COMMISSARIAT ENERGIE ATOMIQUE

Cited by

EP0239501A1; FR2596383A1; US5017344A; WO2017001494A1; WO2019025714A1

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