

Title (en)  
METHOD OF MANUFACTURE AND USE OF HYBRID ANION EXCHANGER FOR SELECTIVE REMOVAL OF CONTAMINATING LIGANDS FROM FLUIDS

Title (de)  
VERFAHREN ZUR HERSTELLUNG UND VERWENDUNG EINES HYBRIDANIONENAUSTAUSCHERS ZUR SELEKTIVEN ENTFERNUNG VERUNREINIGENDER LIGANDEN AUS FLUIDEN

Title (fr)  
PROCEDE DE PRODUCTION ET D'UTILISATION D'ECHANGEUR D'ANIONS HYBRIDE POUR L'EXTRACTION SELECTIVE DE LIGANDS DE CONTAMINATION A PARTIR DE LIQUIDES

Publication  
**EP 1727618 A4 20110309 (EN)**

Application  
**EP 05711420 A 20050113**

Priority  

- US 2005001103 W 20050113
- US 53813104 P 20040121
- US 92560004 A 20040824

Abstract (en)  
[origin: JP2011255383A] PROBLEM TO BE SOLVED: To provide a medium for the selective removal of ligands from aqueous solutions and a method for effectively loading hydrated iron oxides onto an anion exchange resin.SOLUTION: Polymeric anion exchangers are used as host materials in which hydrated Fe (III) Oxides (HFO) are irreversibly dispersed within exchanger beads. Since the anion exchangers have positively charged quaternary ammonium functional groups, anionic ligands such as arsenates, chromates, oxalates, phosphates, phthalates can permeate in and out of a gel phase and are not subjected to the Donnan exclusion effect. Consequently, anion exchanger supported HFO micro particles exhibit significantly greater capacity to remove arsenic and other ligands in comparison with cation exchanger supports. Loading of HFO particles is carried out by preliminary loading of the anion exchange resin with an oxidizing anion such as MnOor OCl, followed by passage of a ferrous sulfate solution through the resin.

IPC 8 full level  
**B01J 20/00** (2006.01); **B01J 20/06** (2006.01); **B01J 20/32** (2006.01); **B01J 41/14** (2006.01); **C02F 1/42** (2006.01); **C11D 7/54** (2006.01); **C02F 1/62** (2006.01); **C02F 101/10** (2006.01); **C02F 101/22** (2006.01)

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Citation (search report)  

- [XP] WO 2004110623 A1 20041223 - BAYER CHEMICALS AG [DE], et al
- [XA] KATSOYIANNIS I A ET AL: "Removal of arsenic from contaminated water sources by sorption onto iron-oxide-coated polymeric materials", WATER RESEARCH, ELSEVIER, AMSTERDAM, NL, vol. 36, no. 20, 1 December 2002 (2002-12-01), pages 5141 - 5155, XP004387246, ISSN: 0043-1354, DOI: 10.1016/S0043-1354(02)00236-1
- [A] DEMARCO M J ET AL: "Arsenic removal using a polymeric/inorganic hybrid sorbent", WATER RESEARCH, ELSEVIER, AMSTERDAM, NL, vol. 37, no. 1, 1 January 2003 (2003-01-01), pages 164 - 176, XP004390523, ISSN: 0043-1354, DOI: 10.1016/S0043-1354(02)00238-5
- See references of WO 2005069825A2

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EP 05711420 A 20050113; JP 2006551161 A 20050113; JP 2011214685 A 20110929