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SDS和TOPO对HEHEHP萃取Fe(Ⅲ)动力学的影响

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摘要 搬运98±1K下用高速搅拌池法考察了2-乙基已基膦酸单2-乙基已基酯(HEHEHP)-正辛烷溶液从0.100mol.dm^-^3硝酸盐水相中萃取Fe(Ⅲ)的动力学. 为了分析萃取动力学机理,确定速度控制步骤在萃取体系中的准确部位,测定了HEHEHP. 三辛基氧化膦(TOPO)和十二烷基磺酸钠(SDS)在正辛烷-0.100mol.dm^-^3硝酸盐体系界面上的吸附特性,结果表明,体系中TOPO的存在使HEHEHP萃取Fe(Ⅲ)速率的影响, 首次作了定量处理.证实了HEHEHP萃取Fe(Ⅲ)动力学过程的界面特征.

关键词 铁 溶剂萃取 乙基已基膦酸单乙基已酯 三辛基氧化膦 萃取机理 十二烷基磺酸钠

分类号 0658

Extraction Kinetics of iron(Ⅲ)by 2-ethylhexyl phosphonic acid mono 2-ethylhexyl ester

GAO ZILI,WANG DUJIN,YANG YONGHUI,SUN SIXIU

Abstract The kinetics and mechanism of solvent extration of iron(III) with a n-octane solution of 2-ethylhexyl phosphonic acid mono-2-ethylhexyl ester (HEHEHP) has been studied at ionic strength 0.1 and 298 ?1 K by means of the high-speed stirring method. In order to further understand the reaction mechanism of iron(III) with HEHEHP and to explain the catalytical role of trioctyl phosphine oxide (TOPO) and sodium dodecyl sulfonate (SDS) on the kinetic processes, so as to determine the exact location of the rate controlling steps in the reaction system, the adsorption activity of HEHEHP, TOPO and SDS at n-octane/0.100mol.dm-3 nitrate interface was measured resp. The results indicate that TOPO decelerates the extration rate of iron(III) with HEHEHP, but SDS accelerates it. The influence of TOPO and SDS on the extration rate of iron(III) with HEHEHP was quant. dealed with.

Key words IRON SOLVENT EXTRACTION ETHYLHEXYL PHOSPHONIC ACID MONOETHYL HEXYLESTER TRIOCTYL PHOSPHINE OXIDE EXTRACTION MECHANISM

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