



论文摘要

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六偏磷酸钠在铝土矿浮选中的作用

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摘要: 通过浮选试验、吸附量测试、动电位测试,研究了六偏磷酸钠对一水硬铝石和高岭石2种矿物浮选行为的影响以及其作用机理.结果表明:六偏磷酸钠对这2种矿物均有抑制作用,当捕收剂用量增大时,被六偏磷酸钠抑制的一水硬铝石的可浮性逐渐变好,而高岭石则变化不大.其主要原因在于六偏磷酸钠与捕收剂油酸钠在这2种矿物表面存在竞争吸附,而油酸钠在一水硬铝石表面的吸附能力强于在高岭石表面的吸附,使得在一定捕收剂用量下,六偏磷酸钠抑制高岭石的上浮而不抑制一水硬铝石,这为2种矿物的浮选分离提供了依据;此外,六偏磷酸钠对矿物表面的动电位影响较大,增大了矿物之间的静电排斥力,有利于矿泥的分散,增强了浮选分离的选择性.

关键字: 六偏磷酸钠;一水硬铝石;高岭石;捕收剂;竞争吸附

Effect of sodium hexametaphosphate on flotation of bauxite

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Abstract: The effect of sodium hexametaphosphate on flotation characteristic of diaspore and kaolinite was studied by flotation experiments, adsorption measurements and Zeta-potential text. Sodium hexametaphosphate has depression action on flotation of diaspore and kaolinite. Increasing the concentration of collector (sodium oleate), floatability of diaspore depressed by sodium hexametaphosphate will be meliorated, but there is no change for kaolinite. There exists competition adsorption on surface of minerals for sodium oleate and sodium hexametaphosphate. Adsorption capacity of sodium oleate on diaspore is stronger than on kaolinite, which results in the fact that sodium hexametaphosphate depresses kaolinite but does not depress diaspore, thus providing the foundation for separation of kaolinite and diaspore. At the same time, sodium hexametaphosphate can change the Zeta-potential of minerals to strengthen the electrostatic repulsive force, which is beneficial to disperse sludge and improve the selectivity of flotation.

Key words: sodium hexametaphosphate; diaspore; kaolinite; collector; competition adsorption

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