THE EFFECT OF PORE SIZE AND PORE SIZE DISTRIBUTION ON ADSOLUBILIZATION KINETICS

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ABSTRACT

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Admicellar catalysis is a new field which is worth study due to the greater stereoselectivity it may give over micellar catalysis, and the fixed bed mode in which it can be employed to develop into industrial scale processes.

Adsolubilization is the necessary pre-step of admicellar catalysis. In this study the adsolubilization kinetics of phenol into SDS admicelles on alumina powder of different pore size distribution and surface properties were measured and analyzed. It was found that both kinetics and amount of adsolubilization are related to alumina surface properties as well as pore size distribution. The adsolubilization can be divided into two parts: fast part and slow part. A first order mode was found to fit the slow part well. The transfer pore size dividing these two parts was defined which should be meaningful both academically and practically. No permanent blockage of adsolubilization was found in this study, this would help to answer some academic queries.

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