

## **A BI-MICROPOROUS/MESOPOROUS COMPOSITE MOLECULAR SIEVE AND PREPARATION PROCESS THEREOF**

### **Abstract**

A double micro-mesoporous composite molecular sieve and preparation method thereof are provided. Said molecular sieve is prepared by combining Y and  $\beta$  microporous zeolites with MCM-41 molecular sieve. The pore wall of hexagonal mesoporous phase is wrapped with double microporous phase, which presents many hollow shell structure of spherical or hemispherical shape. A net structure is formed by the cross-linking of said hollow shell structure with each other, the silica-alumina ratio of microporous phase and the content of microporous phase can be adjusted. The preparation method comprises: a mixed solution of hexadecyl trimethyl ammonium bromide and polyoxyethylene alkylphenol ether is used as template agent. The pretreated double microporous phase and the silica source and/or alumina source for synthesizing mesoporous phase are added into the system respectively. The Y- $\beta$ /MCM-41 double microporous and mesoporous composite molecular sieve which has adjustable silica-alumina ratio of microporous phase and content of microporous phase is obtained by hydrothermal crystallizing process.