

Abstract

The present invention provides an adsorbent for trimethylbenzene-based compounds, which is characterized in that, relative to the total amount of X-type molecular sieve and matrix, it comprises 93-99 wt% of X-type molecular sieve and 1-7 wt% of matrix, the matrix is a substance after crystal transformation through in-situ crystallization of clay mineral, the adsorbent is modified with at least one bivalent cation selected from Mg^{2+} , Ca^{2+} , Sr^{2+} , Fe^{2+} , Co^{2+} , Ni^{2+} and Zn^{2+} and optionally modified with at least one monovalent cation selected from Li^+ , Na^+ , K^+ , Rb^+ and Cs^+ . The present invention also provides a method for preparing the adsorbent, a method of separating trimethylbenzene-based compounds by using the adsorbent, and an apparatus for separating trimethylbenzene-based compounds. The adsorbent for trimethylbenzene-based compounds of the present invention has excellent preferential selectivity for adsorbing trimethylbenzenes, compression strength and bulk density.

FIG. 2