This invention relates to use of synthetic layered material MCM-56 as a sorbent and as a catalyst component in catalytic conversion of organic compounds. Examples of sorbent use include rapid sorption of hydrocarbons and separating at least one hydrocarbon component from a mixture of hydrocarbon components having differential sorption characteristics with respect to MCM-56. Examples of catalytic use include acid catalyzed reactions, such as cracking, aromatic compound alkylation, and isoalkane alkylation.

5538624

PROCESS, APPARATUS AND COMPOSITIONS FOR RECYCLE OF CRACKING CATALYST ADDITIVES

Hettinger William Deerfield Beach, FL, UNITED STATES assigned to Ashland Inc

An improved catalytic process for heavy hydrocarbon conversion (usually but not necessarily in the presence of nickel and vanadium in the feedstock and on the catalyst) to produce lighter and selective molecular weight fractions. This process is specifically targeted as a means of retaining specialty high-valued, preferably microspherical additives (SHVA) which assist in attaining preferred conversion products such as gasoline, especially the recent gasolines meeting compositional requirements of Reformulated Fuel. Selective magnetic retention of these high-cost specialty additives can be achieved by incorporating into them selective magnetic moieties, preferably manganese, the heavy rare earths and superparamagnetic iron. Selective retention is achieved by passing spent or regenerated catalyst containing small amounts of these SHVAs through a magnetic separator, and selectively recycling them back to the circulating catalyst.

5538931

TRANSITION METAL AEROGEL-SUPPORTED CATALYST

Heinrichs Benocirit; Pirard Jean-Paul; Pirard Renacue Liege, BELGIUM assigned to Solvay Deutschland GmbH

A process for preparing a supported catalyst comprising a transition metal selected from palladium, platinum, nickel, cobalt or copper on an aerogel support, which includes the steps of providing a mixture containing an alkoxide precursor of the aerogel, a chelate complex of the transition metal with a chelating agent having Si(OR)3 anchor groups, and an organic solvent in which the chelate complex is soluble; hydrolyzing the mixture by admixing it with water to form a gel; and converting the gel under supercritical conditions into the transition metal aerogel-supported catalyst. The supported catalyst has an especially homogeneous distribution of the metal component and is suitable, for example, for use as a hydrogenation catalyst.