

Patent report

ization over acidic zeolite-based catalysts having pore sizes of at least about 4.5 Å and a pore structure characterized by intersecting 10-MR and 8-MR channels. The catalysts can be used to produce isoolefins for reaction with alcohols in integrated processes to produce alkyl tertiary-alkyl ethers such as MTBE.

Production of olefins by transhydrogenation

R.M. Dessau; R.D. Partridge

Mobil Oil Corp.

PCT Int. Appl. 95/30,635, Nov. 16, 1995; U.S. Appl. May 9, 1994

A process is described for producing an unsaturated analog of a feed compound containing an aliphatic moiety having 2–5 carbon atoms and a saturated analog of a co-feed compound that is a light olefin. The process involves contacting the feed compound and the co-feed compound with a nonacidic catalyst comprising a dehydrogenation metal and a nonacidic crystalline microporous material containing a metal modifier selected from Sn, In, Pb, and Tl, under conditions to dehydrogenate at least a portion of the feed compound and hydrogenate at least a portion of the co-feed compound.

Reforming process

S. Sivasanker; P. Ratnasamy

Council of Scientific and Industrial Research

Indian 172,361, July 3, 1993; Appl. Mar. 21, 1988

An improved reforming process involves contacting a hydrocarbon feedstock in a reaction vessel with hydrogen in the range of 1–10 mol H/mol of hydrocarbon, characterized in that the reaction is carried out in the presence of a catalyst composite material having pore sizes of 3–7 Å and consisting of mixtures of alumina, one or two noble metals, and a crystalline metallosilicate of general composition $0-0.4\text{Na}_2\text{O}\cdot\text{M}_2\text{O}_3\cdot 30-300\text{SiO}_2\cdot 0-10\text{H}_2\text{O}$, wherein M is iron, lanthanum, or boron.

Catalyst system for the reduction of nitrogen oxides in diesel exhaust

G. Schenkermayr; H. Eichlseder

Bayerische Motoren Werke A.-G.

Ger. Offen. 4,440,833, Feb. 8, 1996; Appl. Nov. 15, 1994

An oxidizing and reducing Pt/zeolite catalyst system is described that is structured to accommodate a range of gas temperatures and volumetric flows with controlled dosing of reducing agents, for optimum start-up pollution control.

Exhaust gas catalysts for reduction of nitrogen oxides

P.A. Jacobs; I. Lievens; J.A. Martens

Regie Nationale des Usines Renault

Eur. Pat. Appl. 697,240, Feb. 21, 1996; Fr. Appl. Aug. 18, 1994

Ag-Ga catalysts on zeolites (mordenite, H-β) with a Si/Al ratio >2 are prepared by impregnation of the zeolite with Ga and impregnation or exchange with Ag, for the selective reduction of NO_x by hydrocarbons (propane/propene) at 100–600°C.

Catalytic conversion of methanol to linear olefins using ZSM-35 catalyst

J.G. Santiesteban; C.D. Chang; J.C. Vartuli et al.

Mobil Oil Corp.

U.S. 5,491,273, Feb. 13, 1996; Appl. Nov. 17, 1994

The invention relates to a process for converting a feed containing at least one lower aliphatic alcohol having from 1 to 3 carbon atoms, particularly methanol, or a corresponding ether of such an alcohol, to linear olefins. The process involves contacting the feed in a reaction zone with a catalyst having a large crystal ferrierite aluminosilicate structure (e.g., zeolite ZSM-35).

Manufacture of an ozone filter for air treatment

I. Terada; S. Arai

Nichias Corp.

Ger. Offen. 4,531,179, Mar. 7, 1996; Jpn. Appl. Aug. 31, 1994

The ozone filter comprises a paper support loaded with 15–40 wt% (based on manganese dioxide content) of a zeolite having

a silica/alumina ratio >15 and a finely divided activated manganese dioxide for ozone decomposition.

Preparation of carbonic acid esters from carbon monoxide and nitrite esters

K. Oodan; K. Ishichi; T. Kurato et al.

Ube Industries

Jpn. Kokai Tokkyo Koho 96,20,561, Jan. 23, 1996; Appl. July 5, 1994

Carbonic acid esters are prepared by gaseous-phase reaction of CO with nitrous acid esters in the presence of faujasite-type metaloaluminosilicates supporting platinum-group metal ions. A mixed gas containing MeNO_2 , CO, NO, MeOH, and N was passed through a reactor packed with faujasite-type Zn-exchanged aluminosilicate supporting Pd (preparation given) to give Me_2CO_3 at selectivities based on CO and MeNO_2 of 97 and 88%, vs. 85 and 75%, respectively, for a control using faujasite-type aluminosilicate supporting Pd.

Preparation of haloaromatic compounds

Y. Suguro; H. Matsuda

Mitsubishi Kagaku K.K.

Jpn. Kokai Tokkyo Koho 95,330,641; 95,330,665, Dec. 19, 1995; Appls. June 3 and June 14, 1994

Haloaromatic compounds are prepared by gas-phase halogenation of aromatic compounds using metaloaluminosilicate zeolites. A reactor containing Zn-β-aluminosilicate zeolite catalyst was fed with phthalic anhydride and Cl to give monochlorophthalic anhydride with 95.6% selectivity at 9.7% conversion.

Preparation of 2-phenylbutyronitrile

S. Suzuki; K. Hino; H. Ueno

Tonen Corp.

Jpn. Kokai Tokkyo Koho 95,316,120, Dec. 5, 1995; Appl. May 23, 1994

2-phenylbutyronitrile is prepared by gas-phase ethylation of PhCH_2CN with $(\text{EtO})_2\text{CO}$ using an alkali metal-loaded zeolite catalyst (e.g., K-loaded NaX zeolite).

SEPARATION PROCESSES

Removal of pollutants from aqueous solutions using zeolites

W. Lutz; P. Kleinschmit; E. Roland

Institut fuer Angewandte Chemie Berlin-Adlershof E.V.

Ger. Offen. 4,406,776, Jan. 11, 1996; Appl. Mar. 2, 1994

Pollutants are removed from water and wastewater using dealuminated zeolites surface treated with a sodium aluminate solution. The dealuminated zeolites are highly selective, hydrophobic, thermally and hydrothermally stable, noncombustible, and stable toward sodium hydroxide.

Industrial-scale method for separating *m*- and *p*-ethylphenol using zeolites

M. Matsumoto; T. Hakozaiki; T. Idai et al.

Maruzen Petrochemical Co., Ltd.

U.K. Pat. Appl. 2,291,056, Jan. 17, 1996; Jpn. Appl. July 4, 1994

An industrial-scale method is provided for separating *m*-ethylphenol and *p*-ethylphenol from a mixture containing ethylphenol isomers with high separation efficiency. The method entails adsorption on a K-Y-type zeolite and desorption using a C_{1-4} aliphatic alcohol, at a temperature of not less than the b.p. of the desorbent and under a pressure capable of keeping the feed materials, the desorbent, and the separated and purified products present in a liquid state. The *m*-ethylphenol is recovered as a raffinate, and the *p*-ethylphenol is recovered as an extract.