

microspheres composed of a mixture of spinel, transitional alumina and metakaolin with a seeded alkaline sodium silicate solution.

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## **REFORMING/DEHYDROCYCLIZATION CATALYSTS**

Chen Qianjun; Coughlin Peter K; Pellet Regis Des Plaines, IL, UNITED STATES assigned to UOP

Reforming is effected with a combination of a primary supported noble-metal catalyst and a catalyst containing one or more medium-pore non-zeolitic molecular sieves (MP-NZMS). The latter reforming and dehydrocyclization catalysts comprise a Group VIII metal and at least one bound MP-NZMS characterized in the calcined form by an adsorption of isobutane of at least 2% by weight at a partial pressure of 500 torr and a temperature of 20°C and characterized by an adsorption of triethylamine less than about 5% by weight at a partial pressure of 2.6 torr and a temperature of 22°C. The MP-NZMS catalyst binder preferably is alumina and/or silica, and the Group VIII metal preferably is platinum.

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## **CATALYSTS FOR HALOGENATED HYDROCARBON PROCESSING, THEIR PRECURSORS AND THEIR PREPARATION AND USE**

Rao V N Mallikarjuna; Subramanian Munirpallam A Wilmington, DE, UNITED STATES assigned to E I du Pont de Nemours and Company

A process is disclosed for changing the fluorine content of halogenated hydrocarbons containing from 1 to 6 carbon atoms, in the presence of a multiphase catalyst, which is characterized by

preparing certain single phase solid catalyst precursors containing two metal components (e.g., a divalent component of Mn, Co, Zn, Mg and/or Cd and a trivalent component of Al, Ga, Cr and/or V) which have structures that collapse at about 600°C or less; and producing said catalyst by heating the precursor to produce a multiphase composition wherein a phase containing one of the metal components is homogeneously dispersed with a phase containing the other metal component, and at least when the precursor contains no fluoride, contacting said multiphase composition with a vaporizable fluorine-containing fluorination compound at a temperature of from about 200°C to 450°C. Also disclosed are single phase fluoride compositions having the formula  $MM'F_5(H_2O)_2$  wherein M is a divalent component selected from Mn, Co, Zn, Mg and/or Cd and M' is a trivalent component selected from Al, Ga, Cr and/or V (provided that Cr is not more than about 10 atom percent of M'); preparation of certain homogeneously dispersed multiphase catalyst compositions containing fluorides of those divalent and trivalent metal components; and certain homogeneously dispersed multiphase catalyst compositions containing fluorides of those divalent and trivalent metal components (provided that when Co is used another of said divalent elements is also used).

## **CATALYTIC PROCESSES**

**5541147**

## **IMMOBILIZED FREE MOLECULE AEROSOL CATALYTIC REACTOR**

Friedlander Sheldon; Fischel Lawrence B Pacific Palisades, CA, UNITED STATES assigned to The Regents of the University of California

A catalytic reactor bed in which support particles in the free molecule size range of 50 to 500 #521 ngstroms are attached to an anchor surface to form a dendritic network which extends from 10 microns