+SD,5 +S,5 (R+HD 1+L)+HD n+L,+RE +RE+PS +RE+PS Q, or X, where L can be bridged to Q, B is an optional base, +37 n+38 +0 is 0 to 5, and M is titanium, zirconium, or hafnium.+REium.+RE or hafnium.+REm.+REEium.+REm.+REum.+REu m.+REm.+REum.+REum.+RE hafnium.+REum.+RE.+RERE+S.5 (R+HD 1+L )+HD n+L ,+RE +0 +RB +RD,D00335588B +BL,B +SD,5 +SB,5 +M,1 B+MR,1 +AB,8 R+A,2 +BL,33 +SD,5 +SB,5 +63 +A,5 +BL,A +BN,44 +SD,5 +S,5 (R+HD 1+L )+HD n+L ,+RE +RE+PS +RE+PS Q,or X, where L can be bridged to Q, B is an optional base, +37 n+38 +0 is 0 to 5, and M is titanium, zirconium, or hafnium.+REum.+RE+RE+RE.+RE+RE.+RE+R E.+REium.+REium.+REBN,44 (R+HD 1+L)+HD n+L,+RE+RE+PS+RE+PS Q,or X, where L can be bridged to Q, B is an optional base, +37 n+38 +0 is 0 to 5, and M is titanium. zirconium hafnium.+RE+RE.+RE+RE.+RE+RE.+ RE+RE,+RE+RE,+RE+RE,+RE+RE,+ RE+RE,+RE+RE.+RE+RE.+RERE+RE+RE +RE.+RE+REium.+REium.+REbase. +37 n+38 +0 is 0 to 5, and M is titanium, zirconium, or hafnium.+REium.+REium.+REtional base, +37 n+38 +0 is 0 to 5, and M is titanium, zirconium, or hafnium.+RE

#### 5554777

# CATALYST FOR THE PREPARATION OF LINEAR CARBON MONOXIDE/ALPHA-OLEFIN COPOLYMERS

Hefner John G; Kolthammer Brian W S Lake Jackson, TX, UNITED STATES assigned to The Dow Chemical Company

Novel catalyst compositions comprising a cationic transition metal complex containing palladium, a mono-, di-, or tridendate ligand, and an anion are disclosed. The novel catalyst compositions can be

used in a process for polymerizing carbon monoxide and at least one ethylenically unsaturated hydrocarbon to produce linear alternating polymers. Processes for preparing the novel catalyst compositions are also disclosed.

#### 5559161

### HYDROXY-FUNCTIONAL TRIAMINE CATALYST COMPOSITIONS FOR THE PRODUCTION OF POLYURETHANES

Klotz Herbert; Lassila Kevin; Listemann Mark L; Minnich Kristen E; Savoca Ann C Allentown, PA, UNITED STATES assigned to Air Products and Chemicals Inc

A method for preparing a polyurethane foam which comprises reacting an organic polyisocyanate and a polyol in the presence of a blowing agent, a cell stabilizer and a catalyst composition consisting essentially of a compound of structure I (\*See Patent for Chemical Structure\*) I wherein R is hydrogen, a C1-C4 alkyl, C6-C8 aryl, or C7-C9

#### ENVIRONMENTAL CATALYSIS

#### 5552128

# SELECTIVE CATALYTIC REDUCTION OF NITROGEN OXIDES

Chang Clarence; Santiesteban Jose G; Shihabi David; Stevenson Scott; Vartuli James C Princeton, NJ, UNITED STATES assigned to Mobil Oil Corporation

There is provided a catalytic method for converting nitrogen oxides to nitrogen (i.e., N2). The catalyst for this method comprises an acidic solid component comprising a Group IVB metal oxide modified with an oxyanion of a Group VIB metal

and further comprising at least one metal selected from the group consisting of Group IB, Group IVA, Group VB, Group VIIB, Group VIII, and mixtures thereof. An example of this catalyst is zirconia, modified with tungstate, and iron. This method may be used for reducing emissions of nitrogen oxides from waste gases, including industrial exhaust gases and automobile exhaust gases. In a particular embodiment, nitrogen oxides in waste gases may be reacted with ammonia before the waste gases are discharged to the atmosphere.

#### 5552129

# CATALYTIC SYSTEM FOR THE REDUCTION OF NITROGEN OXIDES

Farnos Maria D; McWilliams John Wilmington, DE, UNITED STATES assigned to Mobil Oil Corporation

There is presented a specially prepared catalyst and a process for the treatment of exhaust gas with that catalyst, which is useful for the selective catalytic reduction of NOx contained in the exhaust gas. An embodiment of the process of this invention comprises a catalytic stage to selectively catalytically reduce NOx over a catalyst composition comprising a metal and an in-situ crystallized zeolite, ZSM-5. The catalyst of this invention may be formed into a desired shape, e.g., by extrusion, and finished in a humidified atmosphere after forming.

#### 5559069

## 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 fluorine-containing vaporizable fluorination compound at a temperature of from about 200°C to 450°C. Also disclosed are single phase fluoride compositions having the formula MM'F5(H2O)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 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).

#### 5559071

## CATALYST, PROCESS FOR THE PRODUCTION THEREOF, AND USE THEREOF FOR THE PREPARATION OF VINYL ACETATE

Abel Roland; Wuml orner Karl-Fre Oberhausen, GERMANY assigned to Hoechst Aktiengesellschaft