

A process is disclosed for producing $\text{CF}_3\text{CH}_2\text{F}$ from CF_3CHClF by catalytic chlorination of CF_3CHClF to $\text{CF}_3\text{CCl}_2\text{F}$ at elevated temperature, and reaction of $\text{CF}_3\text{CCl}_2\text{F}$ with H_2 in the presence of a carbon-supported precious metal catalyst at a temperature of from about 100°C to 250°C . Suitable catalysts for the chlorination include carbon catalysts and catalysts wherein halides of certain metals (La, Zn, Cu, Cr, Ru, Rh, and/or Pt) are supported on carbon.

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**THERMALLY ACTIVATED OLEFIN
METATHESIS CATALYST
PRECURSOR**

Bell Andrew; Coffy Tim West Grove, PA,
UNITED STATES assigned to Metton America Inc

Molybdenum and tungsten compounds that are useful as catalyst precursors in the metathesis of olefins have the general formula: (*See Patent for Tabular Presentation*) PS wherein M is tungsten or molybdenum; Y is oxygen or NR1; R1, R2, and R3 are the same or different and are selected from alkyl, cycloalkyl, cycloalkenyl, polycycloalkyl, polycycloalkenyl, haloalkyl, haloaralkyl, substituted or unsubstituted aralkyl and aryl groups, and silicon-containing analogs thereof; L is a Lewis base; X is halogen; s is 0 or 1; $x+y+z=4$, and $y \geq 1$, provided that when x is 2 or more, two OR2 groups can be replaced by a chelating ligand (OR2)₂. These compounds can be used for the metathesis of olefins in neat metathesizable olefin, as well as in solution, and require only the input of energy to be converted to active catalysts.

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**ORGANOTIN CATALYZED
TRANSESTERIFICATION**

Trapasso Louis E; Meisel Philip L; Meisel Lee B;
Chwang Willy K West Long Branch, NJ,
UNITED STATES assigned to CPS Chemical
Company Inc

Methyl or ethyl esters of mono- and polycarboxylic acids are transesterified with alcohols and polyols by reaction in the presence of a catalytically effective amount of organotin catalyst, so that an alcohol or polyol carboxylic acid ester is formed, which is then washed with aqueous alkali having a pH bigger than about 13.2 so as to remove essentially all of the organotin catalyst, thereby permitting the recovery of the alcohol or polyol carboxylic acid ester essentially free of the organotin catalyst.

5608096

**METHOD OF FORMING SILOXANE
POLYMERS USING A HETEROPOLY
CATALYST HAVING A KEGGIN
STRUCTURE**

Katsoulis Dimitris; Keryk John R Midland, MI,
UNITED STATES assigned to Dow Corning
Corporation

The invention relates to a method of forming siloxane polymers using a heteropoly catalyst having a Keggin structure. The method comprises contacting a fluid comprising at least one siloxane polymer precursor selected from the group consisting of cyclic siloxanes (I) having the formula $(\text{RR}'\text{SiO})_a$ and linear siloxanes (II) having the formula (*See Patent for Chemical Structure*) where R is a substituted or unsubstituted monovalent hydrocarbon having from 1 to 6 carbon atoms, R' is hydrogen or a substituted or

unsubstituted monovalent hydrocarbon having from 1 to 6 carbon atoms, a is at least 3 and b is at least 1; with an effective amount of a heteropoly catalyst having a Keggin structure, selected from the group consisting of heteropoly acids (III) having the formula $H_nXM_{12}O_{40}$, salts thereof and mixed acid-salts thereof, where X is B+3, Si+4, Ge +4, p+5, M is Mo+6 and n is 3, 4 or 5, as required for the valence of the heteropoly acid to equal 0, at a temperature ranging from about 23°C to the boiling point of the siloxane polymer precursor.

5608113

**PROCESS FOR PREPARATION OF
DIAMINES BY CATALYTIC
AMINATION OF AMINOALCOHOLS**

Becker Rainer; Menger Volkmar; Reif Wolfgang;
Henne Andreas Bad Dürkheim, GERMANY
assigned to BASF Aktiengesellschaft

In a process for preparing diamines from aminoalcohols and nitrogen compounds selected from the group consisting of ammonia and primary and secondary amines at from 80° to 250°C and pressures of from 1 to 400 bar using hydrogen in the presence of a zirconium, copper, nickel catalyst, the catalytically active composition comprises from 20 to 85% by weight of oxygen-containing zirconium compounds, calculated as ZrO_2 , from 1 to 30% by weight of oxygen-containing compounds of copper, calculated as CuO , from 30 to 70% by weight of oxygen-containing compounds of nickel, calculated as NiO , from 0.1 to 5% by weight of oxygen-containing compounds of molybdenum, calculated as MoO_3 , and from 0 to 10% by weight of oxygen-containing compounds of aluminum and/or manganese, calculated as Al_2O_3 and MnO_2 respectively.

5608123

**PROCESS FOR CATALYTIC
HYDRATION OF OLEFINS**

Inoue Kaoru; Iwasaki Masao; Ueda Naohiro
Yokohama, JAPAN assigned to Mitsui Toatsu
Chemicals Inc

There is provided a process for reacting water and olefin such as ethylene or propylene under mild conditions in the presence of a polyorganosiloxane contaminating sulfonic acid groups to produce alcohol corresponding to the olefin with high yield and selectivity.

5610113

**PROCESS FOR THE PREPARATION
OF ALPHA-TOCOPHEROL
DERIVATIVES, AND CATALYST**

Matsui Makoto; Yamamoto Hisash Aichi, JAPAN
assigned to Eisai Co Ltd

A process is provided for the preparation of an alpha-tocopherol derivatives which are useful as antisterile vitamins, hypolipidemic blood flow increasing agents, anti-cytosensitivity agents, antioxidants and the like. Catalysts are also provided. The alpha-tocopherol derivatives are represented by the following formula (VII): (*See Patent for Chemical Structure*) (VII) wherein n stands for 0 or an integer of from 1 to 5. The derivative can be industrially prepared by employing as catalyst a metal ion-exchanged montmorillonite, metal ion-exchanged bentonite or metal ion-exchanged saponite which is substituted with one metal ion selected from the group consisting of scandium, yttrium, lanthanide element, aluminium, iron, tin, copper, titanium, zinc, nickel, gallium or zirconium.