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**COBALT-CATALYZED PROCESS FOR
PREPARING 1,3-PROPANEDIOL
USING A LIPOPHILIC TERTIARY
AMINE PROMOTER**

Powell Joseph B; Slauch Lynn; Semple Thomas C;
Weider Paul Houston, TX, UNITED STATES
assigned to Shell Oil Company

1,3-Propanediol is prepared in a process which involves reacting ethylene oxide with carbon monoxide and hydrogen in an essentially non-water-miscible solvent in the presence of a non-phosphine-ligated cobalt catalyst and a lipophilic tertiary amine promoter to produce an intermediate product mixture containing 3-hydroxypropanal in an amount less than 15 wt %; extracting the 3-hydroxypropanal from the intermediate product mixture into an aqueous liquid at a temperature less than about 100°C. and separating the aqueous phase containing 3-hydroxypropanal from the organic phase containing cobalt catalyst; hydrogenating the 3-hydroxypropanal in the aqueous phase to 1,3-propanediol; and recovering the 1,3-propanediol. The process enables the production of 1,3-propanediol in high yield and selectivity without the use of a phosphine ligand-modified cobalt catalyst.

5587348

**ALKYNE HYDROGENATION
CATALYST AND PROCESS**

Brown Scott H; Zisman Stan A; Kimble James B
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Phillips Petroleum Company

A catalyst composition comprises palladium, at least one chemically bound alkali metal (preferably potassium), chemically bound fluorine and an

inorganic support material (preferably alumina), wherein the atomic ratio of fluorine to alkali metals about 1.3:1 to about 4:1. Preferably, silver is also present in the catalyst composition. The above-described catalyst is employed as a catalyst in the selective hydrogenation of C2-C10 alkynes (preferably acetylene) to the corresponding alkenes in the presence of sulfur impurities.

5591688

**PROCESS FOR THE PREPARATION
OF FLUID BED VINYL ACETATE
CATALYST**

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Paparizos Christos Macedonia, OH, UNITED
STATES assigned to The Standard Oil Company

A process for the preparation of a fluid bed vinyl acetate (VAM) catalyst comprising impregnating a support comprising a mixture of substantially inert microspheroidal particles with a solution comprising a halide-free metal salt of Pd and M, wherein M comprises Ba, Au, La, Nb, Ce, Zn, Pb, Ca, Sr, Sb or mixtures thereof, reducing the metal salts to form a deposit of Pd and M on the support surface and impregnating the support with at least one halide-free alkali metal salt. At least 50% of the particles used for the microspheroidal support have a particle size below 100 microns, preferably below 60 microns.

5591873

**FORMED COPPER CATALYST FOR
THE SELECTIVE HYDROGENATION
OF FURFURAL TO FURFURYL
ALCOHOL**

Bankmann Martin; Ohmer Johannes; Tacke
Thomas Gelnhausen, GERMANY assigned to
Degussa Aktiengesellschaft

A formed copper catalyst for the hydrogenation of organic compounds is disclosed, especially for the selective hydrogenation of furfural to furfuryl alcohol. The catalyst contains an intimate mixture of a pyrogenic silica, reduced copper and, optionally, a basic oxide as promotor. The catalyst is distinguished by a high specific catalytic activity, selectivities and yields.

5591878

**CATALYZED PROCESS FOR
PRODUCING METAL
CARBOXYLATES FOR USE AS
ANIMAL FEED SUPPLEMENTS**

Nelson Christopher; Catron Douglas Des Moines, IA, UNITED STATES assigned to Kemin Industries Inc

A catalyzed process is disclosed for producing a polyvalent metal C2-C3 carboxylate having the formula $M(\text{CH}_3(\text{CH}_2)_x\text{COO})_y$, wherein M is the polyvalent metal cation that is manganese (Mn^{+2}), cobalt (Co^{+2}), or chromium (Cr^{+3}), x is zero or 1 and y is an integer equal to the cationic charge of M. The polyvalent metal C2-C3 carboxylate is prepared by admixing (i) a dry polyvalent metal compound that is an oxide, hydroxide or carbonate of Mn^{+2} , Co^{+3} or Cr^{+3} , (ii) an anhydrous C2-C3 carboxylic acid, and (iii) a catalytic agent at a relative molar ratio of about 1:2-10:0.01-3 in the absence of an added solvent or other diluent to form a reaction mixture. The reaction mixture is heated to complete the reaction, remove the produced water and about 80 percent of the unreacted carboxylic acid. The product in residual carboxylic acid is solidified, ground and the product is recovered. The metal carboxylates can be used as biologically available and economical sources of trace metal ions for supplementation in animal diets.

5597773

**ETHYLENE OXIDE CATALYST AND
PROCESS**

Evans Wayne; Mesters Carolus M A Richmond, TX, UNITED STATES assigned to Shell Oil Company

This invention relates to ethylene oxide catalyst for the vapor phase production of ethylene oxide from ethylene and oxygen prepared by impregnating a porous, refractory support having a surface area ranging from about 0.05 to about 10 m²/g with a solubilized catalytically effective amount of silver, a solubilized promoting amount of alkali metal, a solubilized promoting amount of rhenium, and a solubilized promoting amount of hafnium metal, wherein the Group IVB metal is provided in the form of Group IVB oxycation-containing salts. The catalyst provide substantial initial activity improvement as well as long term selectivity and activity stability improvement over prior art rhenium promoted catalyst, without any loss of initial selectivity advantage.

**PETROLEUM AND
PETROCHEMICALS**

35406

**BARIUM TITANIUM
OXIDE-CONTAINING FLUIDIZABLE
CRACKING CATALYST
COMPOSITION**

Groenenboom Cornelis J Driehuis, NETHERLANDS assigned to Akzo N V

A cracking catalyst composition comprising a zeolitic, crystalline aluminosilicate, a matrix material and a barium titanium oxide. The catalyst