

**5532199**

**CARRIER-SUPPORTED CATALYST  
FOR THE SYNTHESIS OF  
UNSATURATED ALDEHYDES AND  
UNSATURATED CARBOXYLIC ACIDS  
AND PROCESS FOR PREPARING THE  
SAME**

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A carrier-supported catalyst for the synthesis of unsaturated aldehydes and unsaturated carboxylic acids, comprising a catalyst active substance comprising at least molybdenum and bismuth as its components, glass fiber having an average diameter in a range of more than 5  $\mu\text{m}$  and not more than 200  $\mu\text{m}$  and an average length in a range of from 50  $\mu\text{m}$  to 1 mm, which is used as a carrier assistant in an amount of 0.5-50% by weight based on the catalyst active substance, and a carrier. The carrier-supported catalyst of this invention suffers no release or fall-off of the catalyst active substance from the carrier even if the catalyst supporting rate is increased. It also has high mechanical strength and is helpful for providing the objective product in a high yield. Further, the carrier-supported catalyst preparation process of this invention is capable of producing a carrier-supported catalyst having excellent mechanical strength and enabling high-yield production of an objective product, with ease and good reproducibility.

**5532385**

**CATALYTIC PROCESS FOR THE  
PRODUCTION OF MALEIC  
ANHYDRIDE**

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The invention relates to vanadium/phosphorus oxide catalyst precursors useful in preparing catalysts useful in the oxidation of hydrocarbons containing 4 carbon atoms to maleic anhydride.

**5534471**

**ION TRANSPORT MEMBRANES  
WITH CATALYZED MIXED  
CONDUCTING POROUS LAYER**

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The present invention relates to surface catalyzed ion transport membranes which demonstrate superior oxygen flux. The membranes comprise a porous mixed conducting multicomponent metallic oxide layer having a first surface onto which a catalyst is deposited and a second surface which is contiguous with a dense mixed conducting multicomponent metallic oxide layer. Suitable catalysts to be deposited onto the porous mixed conducting layer include one or more metals or oxides of metals selected from Groups II, V, VI, VII, VIII, IX, X, XI, XV and the F Block lanthanides of the Periodic Table of the Elements. The claimed membranes are capable of separating oxygen from oxygen-containing gaseous mixtures.

**5536483**

**ZEOLITE Y-BASED CATALYTIC  
COMPOSITION FOR USE IN THE  
TREATMENT OF OXYGENATED  
EFFLUENTS CONTAINING  
NITROGEN OXIDES, ITS  
PREPARATION AND PROCESS FOR  
USE**

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The invention concerns novel zeolite Y containing catalyst compositions and the use thereof for the treatment of oxygenated effluents containing nitrogen oxides. The invention further concerns the preparation of such novel zeolite Y containing catalyst compositions.

**5536687**

**CATALYST CONTAINING ZEOLITE  
BETA**

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assigned to UOP

A composition of matter comprising both (1) zeolite Beta and a (2) Y zeolite having either a unit cell size below about 24.45 angstroms or a water vapor sorption capacity at 25 degrees C at P/Po of 0.10 or less than 10.00 weight percent. Typical of the Y zeolites used in the composition of the invention is a UHP-Y zeolite such as LZ-10 zeolite. The composition is especially suited for use in combination with one or more hydrogenation components as a catalyst for hydrocracking various types of feedstocks to produce either gasoline or middle distillate products.

**5536689**

**CATALYTIC COMPOSITION AND A  
PROCESS FOR THE DIMERIZATION  
OF OLEFINS**

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The invention is concerned with a catalytic composition resulting from dissolving a nickel complex mixed or complexed with a tertiary

phosphine in the medium resulting from mixing at least one quaternary ammonium halide and/or at least one quaternary phosphonium halide, at least one aluminum halide, at least one aromatic hydrocarbon and optionally an aluminum organometallic compound. The invention is also concerned with a process for the dimerization, codimerization and oligomerization of olefins with this composition.

**5536691**

**COBALT CATALYSTS AND A  
PROCESS REQUIRED FOR THEIR  
PREPARATION**

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Cobalt catalysts whose catalytically active material comprises from 55 to 98 wt % of cobalt, from 0.2 to 15 wt % of phosphorus, from 0.2 to 15 wt % of manganese, and from 0.2 to 15 wt % of alkali metal, calculated as oxide, in which the catalyst material is calcined in a first step at final temperatures of from 550 degrees to 750 degrees C and in a second step at final temperatures of from 800 degrees to 1000 degrees C, and a process for the hydrogenation of organic nitriles and/or imines, in which the novel cobalt catalyst is used.

**5536692**

**ISOMERIZATION CATALYST AND  
USE THEREOF IN ISOMERIZATION  
OF SATURATED HYDROCARBONS**

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