

**5532199**

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

Watanabe Seigo; Oh-Kita Motomu Otake,  
JAPAN assigned to Mitsubishi Rayon Co Ltd

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**

Descat Gilles; Hamon Christia Saint Avold, FRANCE assigned to Grande Paroisse SA