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**CATALYST SYSTEM AND PROCESS
FOR THE LIQUID-PHASE
PRODUCTION OF METHANOL FROM
SYNTHESIS GAS**

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A catalyst system for the liquid-phase production of methanol from synthesis gas is described, consisting of: one or more copper compounds; one or more alkoxides of the lanthanum group of formula $(R1O)_xLn$ and/or one or more inorganic oxides of the lanthanum and/or aluminium group; one or more alkaline and/or alkaline-earth alkoxides of formula $(RaO)_xM$, if at least one alkoxide of the lanthanum group is present, then one or more alkoxides of the titanium group of formula $(RtO)_xT$ is present, where R1, Ra and Rt, which can be the same or different, are C1-C10 alkyl groups, M is the alkaline or alkaline-earth metal, Ln is an element of the lanthanum group, T is an element of the titanium group, x is equal to the valency of the metal or element.

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**CATALYZED VAPOR PHASE
PROCESS FOR MAKING SYNTHESIS
GAS**

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A process is disclosed for preparing a synthesis gas comprising hydrogen and carbon monoxide by partial oxidation of hydrocarbyl compounds using a source of oxygen comprising molecular oxygen,

carbon dioxide, or mixtures thereof in the presence of a catalyst comprising thermally stable mixtures formed by heat treating a hydrotalcite-like compound.

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**CATALYST FOR CONVERSION OF
METHANE TO ETHYLENE,
PREPARATION THEREOF, AND
PROCESS FOR MANUFACTURING
ETHYLENE USING SAID CATALYST**

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PCT No. PCT/KR94/00186 Sec. 371 Date Aug. 30, 1995 Sec. 102(e) Date Aug. 30, 1995 PCT Filed Dec. 30, 1994 PCT Pub. No. WO95/17962 PCT Pub. Date Jul. 6, 1995. The present invention relates to a new catalyst for converting methane into ethane, preparation thereof, and process for manufacturing ethylene using said catalyst. The conversion reaction catalyst in the present invention is employed in converting directly methane or methane-containing gas in the presence of the above catalyst with the following general formula (1). (*See Patent for Tabular Presentation*) PS Where, M is a metal cluster or metal complex compound selected from the group of VIII, VII and VI series; S is an inorganic carrier; P is a promoter of phosphorus compound; D is a cobalt compound. And a is weight percentage of metal cluster or metal complex compound in catalyst, having a value of 0.01 to 10, c is weight percentage of promoter in catalyst, ranging from 1.0 to 35.0.