



## 一种用于合成气制甲烷并联产油品的钴基催化剂、其制备及应用方法

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**是否PCT专利** 否

**中文摘要** The invention discloses a catalyst for reaction in the process of preparing methane and coproducing an oil product by using syngas, a preparation method for the catalyst and process conditions of methane synthesis and oil coproduction. The composition of the catalyst is ABCoO/C, wherein an active ingredient is cobalt oxide, and metal-based cobalt accounts for 1.0 to 30.0 percent of the total weight of the catalyst; a second active ingredient A is Ru, Re, Rh or other precious metals, and a metal base of the second active ingredient A accounts for 0.01 to 5.0 percent of the total weight of the catalyst; an aid B is oxide, namely TiO<sub>2</sub>, MnO, Cr<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub> and the like, and a metal base of the aid B accounts for 0.5 to 15 percent of the total weight of the catalyst; and a carrier C is SiO<sub>2</sub>, ZrO, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, activated carbon and the like, and the carrier C accounts for 50 to 95 percent of the total weight of the catalyst. The catalyst is prepared by an impregnation method and is obtained by the following steps of: impregnating the carrier C by using nitrates of the component A and the component B and cobalt nitrate, namely nitrate and cobalt nitrate, and roasting at the temperature of between 400 and 800 DEG C. A raw material of the catalyst is the syngas and is wide in source; the catalyst is low in cost and high in efficiency, and is easy to prepare; and the product can be adjusted according to requirements and is suitable for continuous large-scale production. | 一种合成气制甲烷并联产油品反应应用催化剂、其制备和甲烷合成并联产油的工艺条件。催化剂组成为ABCoO/C, 活性组分为氧化钴, 金属基钴含量为催化剂总重量的1.0-30.0wt%; 第二活性组分A为Ru, Re, Rh或其它贵金属, 其金属基含量为催化剂总重量的0.01~5.0wt%; 助剂B为氧化物TiO<sub>2</sub>, MnO, Cr<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>等, 其金属基含量为催化剂总重量的0.5~15%载体C为SiO<sub>2</sub>, ZrO, Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, 活性炭等, 其重量为催化剂总重量的50~95%。催化剂制备采用浸渍法, 用组分A, B硝酸盐和硝酸钴, 浸渍载体C, 经400-800°C焙烧而成。本发明的原料为合成气, 来源广泛, 催化剂的成本低廉, 制备简单, 效率很高, 产品可按需要进行调节, 适合连续大规模生产。

**学科主题** 物理化学

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