

ONE-STAGE PROCESS FOR DIMETHYL ETHER PRODUCTION

Specification

The one-stage process of synthesis gas conversion for the production of dimethyl ether (DME) as an alternative diesel fuel; the conditions are as follows: copper-zinc three-functional catalyst in the form of thin-layer membranes; temperature and pressure of 240–260 °C and 4.0 MPa, respectively; $H_2/CO = (3\div 5)/1$

Stage of Development.
Suggestions for Commercialization

IRL3, TRL4

Terms of reference for the dimethyl ether production process are proposed; ready for the elaboration of business component



Areas of Application

Production of dimethyl ether
as a substitute for conventional diesel fuel

IPR Protection

IPR3

Advantages

The process matches the world counterparts. The parameters of 10 liter reactor pilot plant run are as follows: DME yield reaches 44–52%, DME selectivity is about 50–52%, and total CO conversion makes up 75–88%. The process intensification is a result of ionic activation of catalytic centers

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