PRODUCT FACT SHEET

DIMETHYL ETHER (DME)

TNO innovation for life

PRODUCT ID

Formula	CH_3OCH_3	CAS nr.	115-10-6
Molecular weight (g/mol)	46.07	EC nr.	204-065-8

VISUAL CLASSIFICATIONS

Market	Energy Demand	Maturity	Price
			

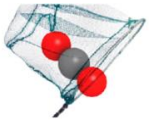
KEY MARKET DATA

Market size (ton/year)	8 millions	
Product price (€/ton)	350	
CO_2 uptake potential (ton/ton product)	1.91	stoichiometric
CO_2 uptake potential (ton/year)	15 millions	18 reference plants 1.5% capture target (1.05Gt/year)
State-of-the-art production technology	From methanol dehydration (TRL 9)	

TECHNOLOGY ROUTE: CATALYTIC HYDROGENATION

TRL = 9	Methanol production from CO_2 hydrogenation + Methanol dehydration (e.g., MegaDME® Lurgi)		
Reactions			
$2\ CH_3OH \rightleftharpoons CH_3OCH_3 + H_2O$ (DME)	$\Delta H_R^0 = -23.50\ kJ\ mol^{-1}$		
Reaction conditions			
Temperature		250 – 360°C	
Pressure		30 to 50 bar	
Catalysts		γ-Al_2O_3	commercially available
CO_2:H_2 molar ratio		3	stoichiometric
Per pass conversion		70-85%	
By-products		water	

For sources and definitions, please consult the original report at the CEMCAP WEBSITE



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