

(GTL)

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H₂/CO

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H₂/CO

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-5-1-2-1

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H_2/CO

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(Kmol/s)

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feed fresh gas

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-		()
		()
	()	()
		()
		()
		()
		()
		()
		()
	C5+	()
	C ₂ H ₄	()
	i-C ₄	()
	n-C ₄	()
	C ₃ H ₈	()
	C ₂ H ₆	()
	CH ₄	()
	CO ₂	()
	CO	()

	H ₂	()
	H ₂ O	()
	.	()
		()
CO ₂		()
C ₅ ⁺		()
		()
	H ₂ /CO(R) C ₅ ⁺	()
	H ₂ /CO(R) CO	()
	H ₂ /CO(R) H ₂	()
	H ₂ /CO(R) CO ₂	()
	H ₂ CO	()
	H ₂ /CO C ₅ ⁺	()
	H ₂ /CO CO ₂	()
(FSFTR)	C ₅ ⁺	()
	(FMDFTR)	
(FSFTR)	H ₂	()
	(FMDFTR)	
(FSFTR)	CO	()
	(FMDFTR)	
(FMDFTR)		()

		()
		(F MDFTR)
(FSFTR)	CO ₂	()
		(F MDFTR)
	CO ₂	()
		(F MDFTR)
		()
		(F MDFTR)
	CO ₂	()
		(F MDFTR)
		()
		(F MDFTR)
	CO ₂	()
		(F MDFTR)
		()
		(F MDFTR)
	C ₅ ⁺	()
		(F MDFTR)
	CO ₂	()
		(F MDFTR)
		()
	H ₂ /CO	C ₅ ⁺ ()
	H ₂ /CO	CO ₂ (()
		CH ₄ ()

A_c		(m^2)
A_l		(m^2)
A_s		(m^2)
A_{shell}		(m^2)
a_v		(m^2m^{-3})
c_t		$(molm^{-3})$
D_l		(m)
D_{ij}		$(m^2s^{-1})_{j \ i}$
D_m^i		$(m^2s^{-1}) \quad i$
D_o		(m)
d_p		(m)
h_i	$(Wm^{-2}K^{-1})$	
h_o	$(Wm^{-2}K^{-1})$	
F_t		$(mols^{-1})$
K		$(Wm^{-1}K^{-1})$
K_w		$(Wm^{-1}K^{-1})$
L		(m)
M_i		$(gmol^{-1})_i$
N		
P		(bar)
P_c		(bar)
R		$(Jmol^{-1}K^{-1})$
Re		
r_i		$(molkg^{-1}s^{-1})_i$ جزء

Sc_i			i
T			(K)
T_s			(K)
T_{sat}		(K)	
T_{shell}		(K)	
T_{tube}		(K)	
U_{shell}	(Wm ⁻² K ⁻¹)		
y_i		(molmol ⁻¹)	i
y_{is}		(molmol ⁻¹)	i
z			(m)
C_i		(molm ⁻³)	i
C_{is}		(molm ⁻³)	i
k_j			
k_{cj}			
K_j			
K_{oi}			i
K_i			i
a_t		(m ²)	
k_{bei}		(ms ⁻¹)	i
P_R^t			(bar)
P_R^{sh}			(bar)

u_g	(ms^{-1})
u_b	(ms^{-1})
α_H	$(\text{molm}^{-1}\text{s}^{-1}\text{Pa}^{-0.5})$
ΔH_{fi}	(Jmol^{-1}) i
ΔH_{298}	(Jmol^{-1})
δ	
ϵ_B	
ϵ_s	
ϵ_{mf}	
μ	$(\text{kgm}^{-1}\text{s}^{-1})$
v_{ci}	$(\text{cm}^3\text{mol}^{-1})$ i
ρ	(kgm^{-3})
ρ_B	(kgm^{-3})
ρ_ϵ	(kgm^{-3})
ρ_p	(kgm^{-3})
η	
<i>in</i>	
<i>out</i>	
s	
t	

sh

b

e

¹-GTL (Gas to Liquid)

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:

()

(ppm)

()

²-Cetan number
³-Fischer-Tropsch

(ppm ppm)

ppm) ppm
(ppm ,

⁴ -Fischer
⁵ -Tropsch

()

()

:

(a

(b

(c

(d

⁶ -Three-phase fluidized bed reactors

⁷ -Multitubular fixed bed reactor

