① Unit of K_G → mol / (time)(area)(ΔP_A)

Unit of K_y → mol / (time)(area)(Δy_A)

unit of K_c → mol / (time)(area)(ΔC_A)

Unit of K_x → mol / (time)(area)(Δx)

unit of K_L → mol / (time)(area)(ΔC_A)

i.e k_L → m/s

k_c → m/s

k_x → mol/m²s Δy_A

k_y → mol/m²s Δy_A

k_G → mol/m²s ΔP_A

③ $N_A = k_y (y_{A_1} - y_{A_2})$ A↑, B↓

$k_y (y_{A_1} - y_{A_2}) = k_c (C_{A_1} - C_{A_2})$

$N_A = k_L (C_{A_1} - C_{A_2}) = k_x (x_{A_1} - x_{A_2})$

$C_A = P/RT \Rightarrow k_G = \dfrac{D_{AB} P}{\delta P_{BM}}$ - ①

$k_y = \dfrac{D_{AB} P^2}{RT \delta P_{BM}}$ - ②

$k_x = \dfrac{D_{AB} (\rho/M)_{av}}{\delta x_{BM}}$ - ③

$k_L = \dfrac{D_{AB}}{\delta x_{BM}}$ - ④

$N_A = k_y' (y_{A_1} - y_{A_2}) = k_c' (C_{A_1} - C_{A_2})$

$N_A = k_L' (C_{A_1} - C_{A_2}) = k_x' (x_{A_1} - x_{A_2})$

$k_y' = \dfrac{D_{AB} P}{RT \delta}$ - ① $\quad k_y' = \dfrac{D_{AB}}{\delta}$ - ②

$k_x' = \dfrac{D_A (\rho/M)_{av}}{\delta}$ - ③ $\quad k_L' = \dfrac{D_{AB}}{\delta}$ - ④

② $k_c = RT k_G$; $k_y = P k_G$; $k_x = (\rho/M)_{av} k_L$

$k_g = k_c/RT$

$K_L = \dfrac{k_x}{c} \Rightarrow k_x = k_c \cdot c$ where, $c = \rho/H_{avg}$