Ejemplos Constante de equilibrio para K_p

a) $C_{(s)} + CO_{2\,(g)} + 2Cl_{2\,(g)} \rightleftharpoons 2COCl_{2\,(g)}$

$$K_p = \frac{(COCl_2)^2}{CO_2 \cdot (Cl_2)^2}$$

b $CaCO_{3(s)} \rightleftharpoons CaO_{(s)} + CO_{2\,(g)}$

$K_p = CO_2$

Unicamente se calculan los gve son gaseosos $_{(g)}$

Presiones parciales

Ej: $2N_2O_{5\,(g)} \rightleftharpoons O_{2\,(g)} + 4NO_{2\,(g)}$

$P_{N_2O_5} = 2.00$ atm

$P_{O_2} = 0.296$ atm

$P_{NO} = 1.70$ atm

$$K_p = \frac{(O_2)(NO_2)^4}{(N_2O_5)^2}$$

Se reemplaza

$$K_p = \frac{(0.296)(1.70)^4}{(2.00)^2} = 0.618$$

Ejercicio

$$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$$

$P_{NH_3} = 1.10$ atm

$P_{N_2} = 0.37$ atm

$P_{H_2} = 2.25$ atm

$$K_p = \frac{(1.10)^2}{(0.37)(2.25)} = 1.45345 \text{ atm}$$