

20/10/2021

Constante de Equilibrio

$$K_c = \frac{[C]^c \times [D]^d \times \dots}{[A]^a \times [B]^b \times \dots}$$

• L = líquido.
• S = sólido.
• G = Gaseoso.
• AQ = Acuoso (AC).

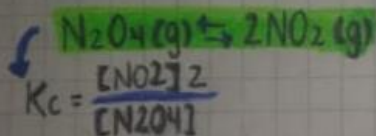
K: Constante de equilibrio.

A, B: Reactivos.

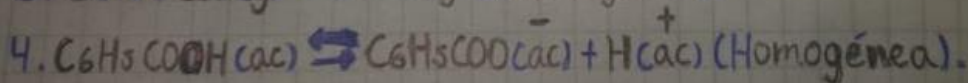
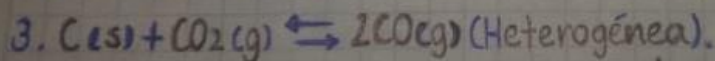
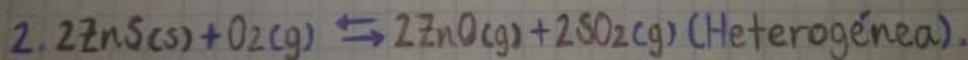
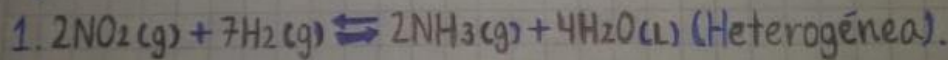
C, D: Productos.

A: Constante de equilibrio en moles.

a: Cantidad de veces que aparece.



Ejercicios: Escribir si es reacción homogénea o heterogénea.



Solución:

$$1. K_c = \frac{[\text{NH}_3]^2 \times [\text{H}_2\text{O}]^4}{[\text{NO}_2]^2 \times [\text{H}_2\text{O}]^7}$$

$$2. K_c = \frac{[\text{ZnO}]^2 \times [\text{SO}]^2}{[\text{ZnS}]^2 \times [\text{O}_2]}$$

$$3. K_c = \frac{[\text{CO}]^2}{[\text{C}] \times [\text{CO}_2]}$$

$$4. K_c = \frac{[\text{C}_6\text{H}_5\text{CO}_6] \times [\text{H}]}{[\text{C}_6\text{H}_5\text{COOH}]}$$

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12/10/2021

$$1. K = \frac{[\text{NH}_3]^2}{[\text{N}_2] [\text{H}_2]^3}$$

	N_2	H_2	NH_3
Equilibrio (M)	3,1	5	1,4

$$K = \frac{[1,4]^2}{[3,1][5]^3} = \frac{[1,96]}{[3,1][125]} = K = \frac{[1,96]}{[387,5]} = 0,005$$

27/10/2021

Equilibrio químico pasando el dato de gramos a moles

1.

$$K = \frac{[SO_3]^2}{[SO_2]^2 [O_2]}$$
$$2SO_2 + O_2 = 2SO_3$$

	SO ₂	O ₂	SO ₃
Equilibrio (g)	120	80g	150g
Equilibrio (m)	0.93	1.25	0.93

$$K = \frac{[0.93]^2}{[0.93]^2 [1.25]} \quad K = \frac{[0.864]}{[0.864] [1.25]}$$

$$K = \frac{[0.864]}{[1.08]} = 0.8$$

2.

	H ₂	Cl ₂	HCl
g	37	25	11
M	3.08	0.058	0.050

$$K_c = \frac{[HCl]^2}{[H_2] [Cl_2]}$$

$$K_c = \frac{[0.050]^2}{[3.08] [0.058]} = \frac{0.0025}{0.17864}$$

$$K_c = 0.013$$