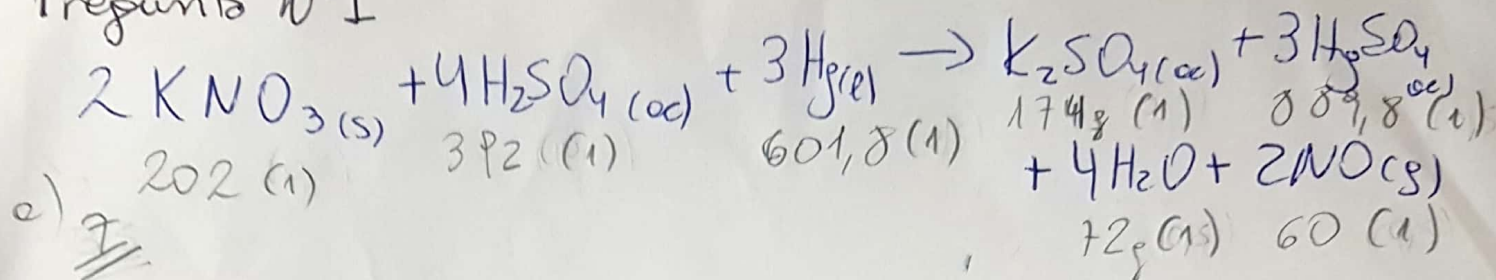


Pregunta N°1



b)
$$\begin{array}{l} 202 \text{ g KNO}_3 \rightarrow 60 \text{ g NO}_{(1,5)} \\ 300 \text{ g KNO}_3 \rightarrow X \end{array}$$

$$\boxed{X = 89,1 \text{ g NO}_{(1,5)}}$$

$$\begin{array}{l} 60 \text{ g} \rightarrow 2 \text{ moles} \text{ (1,5)} \\ 89,1 \text{ g} \rightarrow X \end{array}$$

$$\boxed{X = 2,97 \text{ moles}_{(1,5)}}$$

$$d = \frac{m}{V} \Rightarrow \text{Volumen} = \frac{m}{d} = \frac{89,1 \text{ g}}{0,00127 \text{ g/ml}} \quad 0,5$$

$$\boxed{\text{Volumen} = 70157 \text{ ml}} \quad (0,5)$$

c)
$$\begin{array}{l} V = 750 \text{ ml} \rightarrow 0,75 \text{ L} \\ T = 23^\circ\text{C} \rightarrow 296 \text{ K} \\ m = 2,97 \text{ moles} \end{array}$$

$$PV = n \cdot R \cdot T$$

$$P = \frac{n \cdot R \cdot T}{V}$$

$$P = \frac{2,97 \cdot 0,082 \cdot 296}{0,75} \text{ (3)}$$

$$\boxed{P = 96,117 \text{ atm}} \text{ (2)}$$

c)
$$\begin{array}{l} 202 \text{ g KNO}_3 \rightarrow 601,8 \text{ g Hg} \\ 300 \text{ g KNO}_3 \rightarrow X \end{array}$$

$$X = 893,8 \text{ g} \text{ (3)}$$

$$\text{Vol Hg} = \frac{893,8 \text{ g}}{13,6 \text{ g/ml}} \text{ (2)}$$

$$\text{Vol Hg} = 65,72 \text{ mm} \text{ (1)}$$

$$\boxed{\text{Vol Hg} = 0,066 \text{ L}}$$

Pregunta N°3 CO_2

$\Delta H_{\text{reacción}} = [(-393,5 \times 2,75) + (-285,5 \times 2,5)] - (-20,10) \quad (3)$

$\Delta H_{\text{reacción}} = -1776 \text{ KJ} \quad (2)$

b) Reacción Exotérmica⁽³⁾, se evidencia en el resultado obtenido. el ser (-) luego la entalpía de los Ps muy superior a la ΔH del reactante. (4) explicación

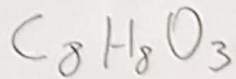
$0,287 \text{ kg} \text{ — } 1776 \quad (4)$
 $1 \text{ kg} \text{ — } X$

$X = 6188,2 \text{ KJ} \quad (2)$

Pregunta N°4

Datos

masa vainilla 1,013 g



$$t^{\circ} \uparrow = 2,4^{\circ}C$$

$$masa agua = 1,5 kg$$

$$C_p bomba = 1,53 \text{ KJ/}^{\circ}C$$

$$Q_{lib} = -Q_{abs}$$

$$\underline{\underline{5}} \quad Q_{lib} = - \left(1,5 \overset{(1)}{kg} \cdot 4,18 \overset{(1)}{KJ} \cdot 2,4^{\circ}C + 1,53 \overset{(1)}{KJ} \cdot 2,4^{\circ}C \right)$$

$$\underline{\underline{4}} \quad \boxed{Q_{lib} = -18,72 \text{ KJ}} \quad (2)$$

$$MM C_8H_8O_3 = 152 \text{ g/mol}$$

$$\underline{\underline{6}} \quad \begin{array}{l} 152 \text{ g} \text{ — } 1 \text{ mol} \\ 1,013 \text{ g} \text{ — } X \end{array} \quad (2)$$

$$X = 0,007 \text{ mols} \quad (1)$$

$$Calor \text{ molar} = \frac{18,72 \text{ KJ}}{0,007 \text{ mol}} \quad (2)$$

$$Calor \text{ molar} = 2674 \frac{\text{KJ}}{\text{mol}} \quad (1)$$

Pregunta N°2

RDX

$$1- \% BO = -\frac{1600}{222} \left[2 \cdot 3 + \frac{6}{3} - 6 \right] \quad (1)$$

$$\% BO = -21,62 \quad (1)$$

Poco Sensible (1)

Nitroguanidina

$$\% BO = -\frac{1600}{104} \left[2 \cdot 1 + \frac{4}{2} - 2 \right] \quad (1)$$

$$\% BO = -30,77 \quad (1)$$

Poco Sensible 1

2- Tiene poca capacidad de absorber agua (humedad)

3- Los explosivos se inestabilizan a elevadas temperaturas.

4- RDX

$$P.C = \frac{1078 \text{ (KJ)}}{222 \text{ (g)}} = 4,86 \frac{\text{KJ}}{\text{g}} \quad (2)$$

$$P.C = \frac{1078 \text{ (KJ)}}{0,222 \text{ (Kg)}} = 4856 \frac{\text{KJ}}{\text{Kg}} \quad (2)$$

Nitroguanidina

$$P.C = \frac{460 \text{ (KJ)}}{104 \text{ (g)}} = 4,42 \frac{\text{KJ}}{\text{g}} \quad (2)$$

$$P.C = \frac{460 \text{ (KJ)}}{0,104 \text{ (Kg)}} = 4423 \frac{\text{KJ}}{\text{Kg}} \quad (2)$$

5- RDX

$$0,222 \text{ Kg} \text{ --- } 1078 \text{ KJ} \quad (2)$$

$$1 \text{ Kg} \text{ --- } X$$

$$X = 4856 \text{ KJ}$$

$$0,104 \text{ Kg} \text{ --- } 460 \text{ KJ} \quad (2)$$

$$1 \text{ Kg} \text{ --- } X$$

$$X = 4423 \text{ KJ}$$

$$0,222 \text{ Kg} \text{ --- } 9 \text{ moles gas}$$

$$1 \text{ Kg} \text{ --- } X$$

$$X = 40,54 \text{ moles gas} \quad (2)$$

$$0,104 \text{ Kg} \text{ --- } 5 \text{ moles gas}$$

$$1 \text{ Kg} \text{ --- } X$$

$$X = 48,08 \text{ moles gas}$$

$$V = \frac{40,54 \cdot 0,082 \cdot 273}{1} \quad (2)$$

$$V = 907,5 \text{ L}$$

$$V = \frac{48,08 \cdot 0,082 \cdot 273}{1} \quad (2)$$

$$V = 1076,3 \text{ L}$$