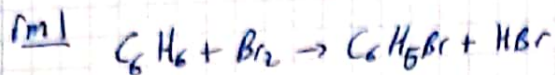
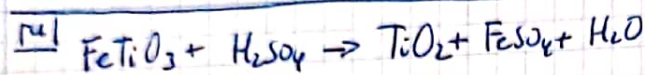


# PARTE 6 STR RENDIMIENTO



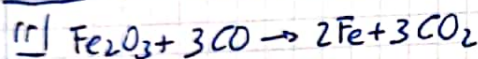
$$30g C_6H_6 \times \frac{1 \text{ mol } C_6H_6}{78g} \times \frac{1 \text{ mol } C_6H_5Br}{1 \text{ mol } C_6H_6} \times \frac{157g}{1 \text{ mol } C_6H_5Br} = 60,39g$$

$$\text{RENDIMIENTO} = \frac{56,7}{60,39} \times 100 = 93,9\%$$



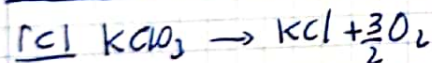
$$1600 \cdot 10^3 g FeTiO_3 \times \frac{1 \text{ mol } FeTiO_3}{151,8g} \times \frac{1 \text{ mol } TiO_2}{1 \text{ mol } FeTiO_3} \times \frac{79,9g}{1 \text{ mol } TiO_2} = 842160,7g = 842,2kg$$

$$\text{RENDIMIENTO} = \frac{734}{842,2} \times 100 = 87,15\%$$



$$42,4g Fe_2O_3 \times \frac{1 \text{ mol } Fe_2O_3}{159,8g} \times \frac{2 \text{ mol } Fe}{1 \text{ mol } Fe_2O_3} \times \frac{55,9g}{1 \text{ mol } Fe} = 29,66g$$

$$\text{RENDIMIENTO} = \frac{28,9}{29,66} \times 100 = 97,44\%$$



$18^\circ C = 291K$   $P = 0,987 \text{ atm}$

CANTIDAD DE  $O_2$  OBTENIDA

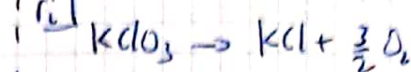
$$n = \frac{PV}{RT} = \frac{0,987 \cdot 20}{0,082 \cdot 291} = 0,827 \text{ mol } O_2$$

$$0,827 \text{ mol } O_2 \times \frac{32g}{1 \text{ mol } O_2} = 26,464g$$

CANTIDAD TEÓRICA

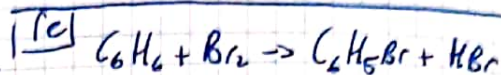
$$100g KClO_3 \times \frac{1 \text{ mol } KClO_3}{122,6g} \times \frac{1,5 \text{ mol } O_2}{1 \text{ mol } KClO_3} \times \frac{32g}{1 \text{ mol } O_2} = 39,15g$$

$$\text{RENDIMIENTO} = \frac{26,464}{39,15} \times 100 = 67,6\%$$

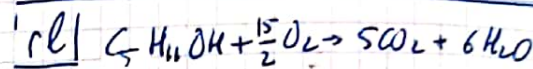


$$40 \cdot 10^3 g KClO_3 \times \frac{98g}{100} \times \frac{1 \text{ mol } KClO_3}{122,6g} \times \frac{1 \text{ mol } KCl}{1 \text{ mol } KClO_3} \times \frac{74,6g}{1 \text{ mol } KCl} = 23852,53g = 23,85kg$$

$$\text{RENDIMIENTO} = \frac{15,6}{23,85} \times 100 = 65,4\%$$

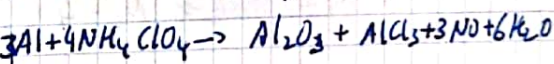


$$250 \text{ mL} \times \frac{0,87g}{1 \text{ mL}} \times \frac{1 \text{ mol } C_6H_6}{78g} \times \frac{1 \text{ mol } C_6H_5Br}{1 \text{ mol } C_6H_6} \times \frac{157g}{1 \text{ mol } C_6H_5Br} = 294,1g$$



$$1 \text{ mol } C_5H_{11}OH \times \frac{5 \text{ mol } CO_2}{1 \text{ mol } C_5H_{11}OH} = 5 \text{ mol } CO_2$$

$$V = \frac{nRT}{P} = \frac{5 \cdot 0,082 \cdot 273}{1} = 111,73L$$



REACTIVO LIMITANTE

$$5,75g Al \times \frac{1 \text{ mol } Al}{27g} = 0,213 \text{ mol } Al$$

$$0,213 \text{ mol } Al \times \frac{4 \text{ mol } NH_4ClO_4}{3 \text{ mol } Al} = 0,284 \text{ mol } NH_4ClO_4$$

$$7,32g \times \frac{1 \text{ mol } NH_4ClO_4}{117,5g} = 0,062 \text{ mol } NH_4ClO_4$$

$$0,062 \text{ mol } NH_4ClO_4 \times \frac{3 \text{ mol } Al}{4 \text{ mol } NH_4ClO_4} = 0,047 \text{ mol } Al$$

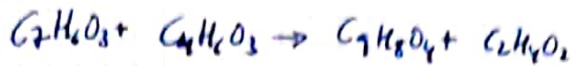
REACTIVO LIMITANTE  $\Rightarrow 0,062 \text{ mol}$

$$0,062 \text{ mol } NH_4ClO_4 \times \frac{1 \text{ mol } AlCl_3}{4 \text{ mol } NH_4ClO_4} \times$$

$$\frac{133,5g}{1 \text{ mol } AlCl_3} = 2,07g$$

$$\text{RENDIMIENTO} = \frac{1,87}{2,07} \times 100 = 90,34\%$$

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REACTIVO LIMITANTE

$$185 \cdot 10^3 \text{ g } C_7H_6O_3 \times \frac{1 \text{ mol } C_7H_6O_3}{138 \text{ g } C_7H_6O_3} = 1340,58 \text{ mol } C_7H_6O_3$$

$$1340,58 \text{ mol } C_7H_6O_3 \times \frac{1 \text{ mol } C_4H_6O_3}{1 \text{ mol } C_7H_6O_3} = 1340,58 \text{ mol } C_4H_6O_3$$

$$125 \cdot 10^3 \text{ g } \times \frac{1 \text{ mol } C_4H_6O_3}{90 \text{ g}} = 1388,89 \text{ mol } C_4H_6O_3$$

$$1388,89 \text{ mol } C_4H_6O_3 \times \frac{1 \text{ mol } C_7H_6O_3}{1 \text{ mol } C_4H_6O_3} = 1388,89 \text{ mol } C_7H_6O_3$$

REACTIVO = 1340,58 mol  $C_7H_6O_3$

$$1340,58 \text{ mol } C_7H_6O_3 \times \frac{1 \text{ mol } C_9H_8O_4}{1 \text{ mol } C_7H_6O_3} \times$$

$$\times \frac{180 \text{ g}}{1 \text{ mol } C_9H_8O_4} = 241304,4 \text{ g} = 241,3 \text{ kg}$$

RENDIMIENTO =  $\frac{182 \text{ kg}}{241,3 \text{ kg}} \times 100 = 75,4\%$