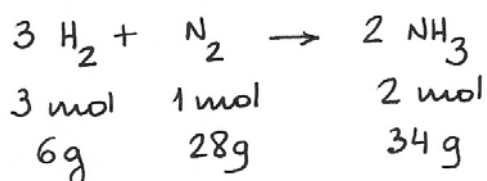


① Ekuazio Kimikoa



a) Erreaktibo mugatzailea

$$\begin{array}{l}
 x(\text{H}_2) = \frac{5 \text{ g}}{6 \text{ g}} = 0,83 \text{ aldiz taulakoa} \\
 x(\text{N}_2) = \frac{35 \text{ g}}{28 \text{ g}} = 1,25 \text{ aldiz taulakoa}
 \end{array}
 \left. \vphantom{\begin{array}{l} x(\text{H}_2) \\ x(\text{N}_2) \end{array}} \right\} \text{H}_2 \text{ da mugatzailea}$$

b) Amoniakozen mol-kopuzua eta masa

$$m(\text{NH}_3) = 5 \text{ g H}_2 \times \frac{34 \text{ g NH}_3}{6 \text{ g H}_2} = 28,3 \text{ g NH}_3$$

$$n(\text{NH}_3) = 5 \text{ g H}_2 \times \frac{2 \text{ mol NH}_3}{6 \text{ g H}_2} = 1,67 \text{ mol NH}_3$$

$$c) \quad x = 35 \text{ g N}_2 \times \frac{1 \text{ mol N}_2}{28 \text{ g N}_2} \times \frac{6,02 \times 10^{23} \text{ molek}}{1 \text{ mol N}_2} = 7,53 \times 10^{23} \text{ molek N}_2$$

$$x = 7,53 \times 10^{23} \text{ molek N}_2 \times \frac{2 \text{ at N}}{1 \text{ molek}} = 1,51 \times 10^{24} \text{ atomo N}$$

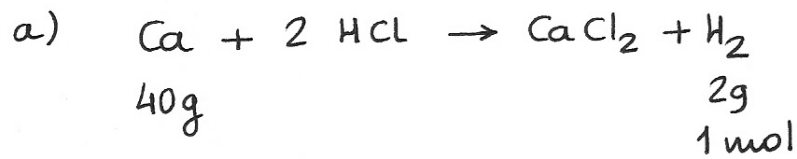
$$d) \quad PV = nRT \rightarrow V = \frac{nRT}{P}$$

$$n = \frac{5 \text{ g H}_2}{2 \text{ g/mol}} = 2,5 \text{ mol H}_2$$

$$T = 30 + 273 = 303 \text{ K}$$

$$V = \frac{2,5 \text{ mol} \times 0,082 \text{ atm}\cdot\text{L}/\text{K}\cdot\text{mol} \times 303 \text{ K}}{1,2 \text{ atm}} = 51,8 \text{ L}$$

$$\textcircled{2} \quad m(\text{Ca}) = 20 \text{ g lagin} \times \frac{90 \text{ g Ca}}{100 \text{ g lagin}} = 18 \text{ g Ca}$$



$$n(\text{H}_2) = 18 \text{ g Ca} \times \frac{1 \text{ mol H}_2}{40 \text{ g Ca}} = 0,45 \text{ mol H}_2$$

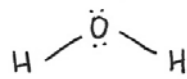
B.N. - etan ... $1 \text{ mol} \Leftrightarrow 22,4 \text{ L}$

$$V(\text{H}_2) = 0,45 \text{ mol} \times \frac{22,4 \text{ L}}{1 \text{ mol}} = 10,08 \text{ L H}_2$$

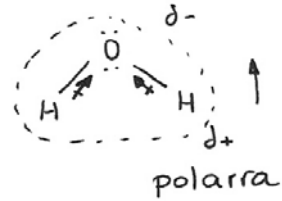
$$\text{b) } n(\text{HCl}) = 18 \text{ g Ca} \times \frac{2 \text{ mol HCl}}{40 \text{ g Ca}} = 0,9 \text{ mol HCl}$$

$$\begin{aligned} V(\text{HCl dis}) &= 0,9 \text{ mol HCl} \times \frac{1 \text{ L}}{6,5 \text{ mol}} = 0,138 \text{ L} = \\ &= 138 \text{ cm}^3 \end{aligned}$$

③ a) H_2O



angeluarra
 $\sim 109^\circ$



Indaz intermolekularrak:
H ZUBIZKO LOTURAK

b) CO_2



lineala
 180°

apolarra
sakabanaketa-ındarrak

ERODLTASUNA:

H_2O, CO_2, HCl ez

MgO ... urtuta edo disolbatuta

Fusio-PUNTUS:

H_2O, CO_2, HCl ... baxua

MgO ... altua

④ a) F... $1s^2 2s^2 2p^5$

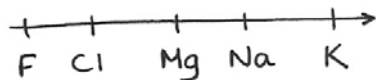
Na... $1s^2 2s^2 2p^6 3s^1$

Mg... $1s^2 2s^2 2p^6 3s^2$

Cl... $1s^2 2s^2 2p^6 3s^2 3p^5$

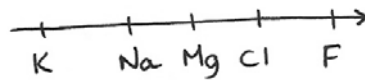
K... $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1$

b)



Tamaina
handitzen

c)



Elektronegabitatea
handitzen

d)

Cl^- eta K^+ ... $18 e^-$... $1s^2 2s^2 2p^6 3s^2 3p^6$

Na^+ , F^- eta Mg^{2+} ... $10 e^-$... $1s^2 2s^2 2p^6$

5. Formulazioa

Izena	Formula	Egitura
Azido nitroso	HNO_2	$\text{H}-\ddot{\text{O}}-\ddot{\text{N}}=\ddot{\text{O}}:$
Aluminio oxido	Al_2O_3	$2 \times \text{Al}^{3+}$ $3 \times \ddot{\text{O}}^{2-}$
Kaltzio hidroxido	$\text{Ca}(\text{OH})_2$	Ca^{2+} $2 \times \text{:}\ddot{\text{O}}-\text{H}$
Azido sulfuriko	H_2SO_4	$\begin{array}{c} \text{:}\ddot{\text{O}}=\text{S}=\ddot{\text{O}}\text{:} \\ \text{H}-\ddot{\text{O}}-\text{S}-\ddot{\text{O}}-\text{H} \end{array}$
Azido karboniko	H_2CO_3	$\begin{array}{c} \text{:}\ddot{\text{O}} \\ \parallel \\ \text{H}-\ddot{\text{O}}-\text{C}-\ddot{\text{O}}-\text{H} \end{array}$
Karbono dioxido	CO_2	$\text{:}\ddot{\text{O}}=\text{C}=\ddot{\text{O}}\text{:}$
Potasio hipoklorito	KClO	K^+ $\text{:}\ddot{\text{O}}-\ddot{\text{Cl}}\text{:}$
Amoniako	NH_3	$\begin{array}{c} \text{H}-\ddot{\text{N}}-\text{H} \\ \\ \text{H} \end{array}$
Ura	H_2O	$\text{H}-\ddot{\text{O}}-\text{H}$
Aluminio sulfato	$\text{Al}_2(\text{SO}_4)_3$	$2 \times \text{Al}^{3+}$ $\begin{array}{c} \text{:}\ddot{\text{O}} \\ \parallel \\ \text{:}\ddot{\text{O}}-\text{S}-\ddot{\text{O}}\text{:} \\ \parallel \\ \text{:}\ddot{\text{O}}\text{:} \end{array}$

Sufre dioxido	SO_2	$:\ddot{\text{O}} = \ddot{\text{S}} = \ddot{\text{O}}:$
Sufre trioxido	SO_3	$:\ddot{\text{O}} = \text{S} \begin{array}{l} \text{:}\ddot{\text{O}}\text{:} \\ \text{:}\ddot{\text{O}}\text{:} \end{array}$
Hidrogeno sulfuro	H_2S	$\text{H} - \ddot{\text{S}} - \text{H}$
Magnesio Karbonato	MgCO_3	$\text{Mg}^{2+} \quad \begin{array}{c} \text{:}\ddot{\text{O}}\text{:} \\ \text{:}\ddot{\text{O}} - \text{C} - \ddot{\text{O}}\text{:}^- \\ \text{:}\ddot{\text{O}}\text{:}^- \end{array}$
Azido perkloriko	HClO_4	$\begin{array}{c} \text{:}\ddot{\text{O}}\text{:} \\ \text{:}\ddot{\text{O}} = \text{Cl} - \ddot{\text{O}} - \text{H} \\ \text{:}\ddot{\text{O}}\text{:} \end{array}$