

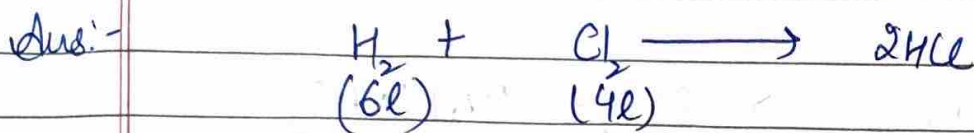
CLASS - X

CHAPTER - 5

SUBJECT - CHEMISTRY

TEACHER - ANAMIKA

Q:- If 6 l of Hydrogen & 4 l of Chlorine are mixed & exploded & if water is added to the gas formed; find vol. of Residual gas.



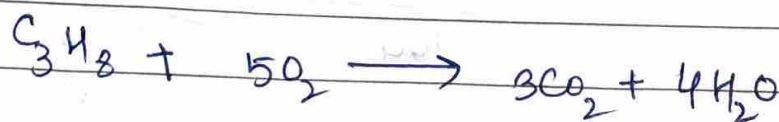
1 vol. of H_2 Combure with 1 vol. of Cl_2

$\therefore 6\text{l} \sim \sim \sim 6\text{l} \sim \text{Cl}_2$

But there is only 4 l of Cl_2 . Therefore Cl_2 is limiting reagent

$\therefore$ Only 4 l of H_2 is used. Remaining 2 l remains unreacted. Water is added to the solⁿ As HCl is highly soluble in water.

Q:- What vol. of propane is burnt for every 500 cm³ of air used in the reaction under same condition?
(Assuming Oxygen is $\frac{1}{5}$ th of air)



Ans:- In 500cm^3 of air only 100cm^3 of O_2 is present as O_2 is $\frac{1}{5}$ th of air.

5 Vol. of O_2 require for combustion of 1 Vol of C_3H_8

$$\begin{array}{r} 1 \text{ " } \qquad \qquad \qquad \text{ " } \qquad \qquad \text{ " } \\ 100 \text{ —————} \end{array} \quad \begin{array}{l} = \frac{1}{5} \\ \frac{1}{5} \times 100 \\ = 20\text{cm}^3 \end{array}$$

Q:- $\text{Al}_4\text{C}_3 + 12\text{H}_2\text{O} \longrightarrow 3\text{CH}_4 + 4\text{Al}(\text{OH})_3$

a) what mass of aluminium hydroxide is formed from 12g of Al_4C_3

b) what vol. of CH_4 is obtained from 12g of Al_4C_3 .

Ans:- a) 144g of Al_4C_3 produce 312g $\text{Al}(\text{OH})_3$

$$\begin{array}{r} 1\text{g} \text{ —————} \quad \frac{312}{144} \\ 12\text{g} \text{ —————} \quad \frac{312}{144} \times 12 = 26\text{g} \end{array}$$

b) 144g of Al_4C_3 ————— 98g of CH_4

$$\begin{array}{r} 1 \text{ —————} \quad \frac{18}{144} \\ 12 \text{ —————} \quad \frac{18}{144} \times 12 = 1.5\text{g} \end{array}$$

$$\text{Vol} = \frac{1.5}{16} \times 22.4 = 2.1\text{L}$$