

BOYLE

$$PV = C$$

MA

$$PV = nRT \quad \begin{matrix} \nearrow \text{const.} \\ \searrow \text{const.} \end{matrix}$$

$$P_i V_i = P_F V_F$$

$$V_F = \frac{6875}{P_F} = 88 \text{ mL}$$

$$PV = nRT$$

$$561 \text{ mmHg} = 0.738 \text{ atm}$$

$$125 \text{ mL} = 0.125 \text{ L}$$

$$23^\circ \text{C} = 296 \text{ K}$$

$$n = \frac{PV}{RT} = 3.80 \cdot 10^{-3} \text{ mol}$$

$$n = \frac{m}{M_m} \quad M_m = \frac{m}{n} = \overset{0.105 \text{ g}}{=} 27.63 \text{ g/mol}$$

$$m = 1.25 \text{ g di } \text{CO}_2$$

$$n_{\text{CO}_2} = \frac{1.25}{M_{\text{CO}_2}} = 2.84 \cdot 10^{-2} \text{ mol}$$

$$V = 0.750 \text{ L} \quad T = 295.5 \text{ K}$$

$$p = \frac{nRT}{V} = 0.918 \text{ atm}$$

$$P = 0.257 \text{ atm}$$

$$T = 298 \text{ K}$$

$$d = 1.25 \text{ g/L}$$

$$PV = nRT = \frac{m}{M_m} RT$$

$$M_m = \frac{m}{V} \cdot \frac{RT}{P} = \frac{d \cdot RT}{P}$$

$$= 119 \text{ g/mol}$$

$$m = 12.5 \cdot 10^{-3} \text{ g}$$

$$P = 3.26 \cdot 10^{-2} \text{ atm}$$

$$T = 298 \text{ K}$$

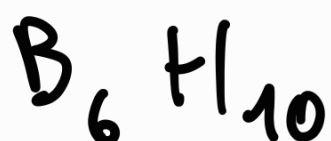
$$V = 1.25 \cdot 10^{-1} \text{ L}$$

$$M_m = \frac{m R T}{P V}$$

$$= 75.0 \text{ g/mol}$$

$$P_A(B) = 10.81 \text{ uMA}$$

$$P_A(H) = 1.001 \text{ uMA}$$



2.2 g Di Fe

$$n_{\text{Fe}} = \frac{2.2}{55.845} = 3.94 \cdot 10^{-2} \text{ mol}$$

$$n_{\text{Fe}} = n_{\text{H}} \quad V = 10.0 \text{ L}$$

$$T = 298 \text{ K}$$

$$P = \frac{n_{\text{H}} RT}{V} = 9.63 \cdot 10^{-2} \text{ atm}$$

$$M_{\text{N}_2\text{H}_4} = 32.017 \text{ g/mol}$$

$$n_{\text{N}_2\text{H}_4} = \frac{1000}{32.017} = 31.23 \text{ mol}$$

$$n_{\text{O}_2} = n_{\text{N}_2\text{H}_4}$$

$$P = \frac{n_{\text{O}_2} R T}{V} \xrightarrow{298 \text{ K}} 1.70 \text{ atm}$$

$V \rightarrow 450 \text{ L}$

$$P_x V = n_x RT$$

$$c) \quad n_{H_2} = \frac{PV}{RT} = \frac{1.0 \cdot 17.5}{R \cdot 294.5}$$

$$= 0.517 \text{ mol}$$

$$m_{H_2} = n_{H_2} \cdot M_{mH_2}$$

$$= 2.07 \text{ g}$$

$$b) \quad P_{iH_2} = 1 \text{ atm}$$

$$P_{fH_2} = \frac{n_{H_2} RT}{V_F}$$

$$= \frac{0.517 \cdot R \cdot 294.5}{26}$$

$$= 0.48 \text{ atm}$$

$$c) \quad P_T = P_{O_2} + P_{H_2}$$

$$P_{O_2} = P_T - P_{H_2} = 1 - 0.48 \\ = 0.52 \text{ atm}$$

$$d) \quad X_{O_2} = P_{O_2} / P_T = 0.52$$

$$X_{H_2} = P_{H_2} / P_T = 0.48$$

$$E_c = \frac{1}{2} m V^2$$

LA T E' MISURA DELL'ENERG.
CINETICA DEL GAS

$$PM_{Ar} = 39.45 \text{ u.m.a.}$$

$$PM_{CH_4} = 16 \text{ u.m.a.}$$

$$PM_{N_2} = 28 \text{ u.m.a.}$$

$$PM_{CH_2F_2} = 52.01 \text{ u.m.a.}$$





1.56 g

0.967 atm

→ 0.327 L

$$n_{O_2} = \frac{PV}{RT} = 1.32 \cdot 10^{-2} \text{ mol}$$

→ 292 K

$$n_{KClO_3} = \frac{2}{3} n_{O_2} =$$

$$= 8.80 \cdot 10^{-3} \text{ mol}$$

$$m_{KClO_3} = n_{KClO_3} \cdot M_{m, KClO_3} \rightarrow 122.55 \frac{g}{mol}$$

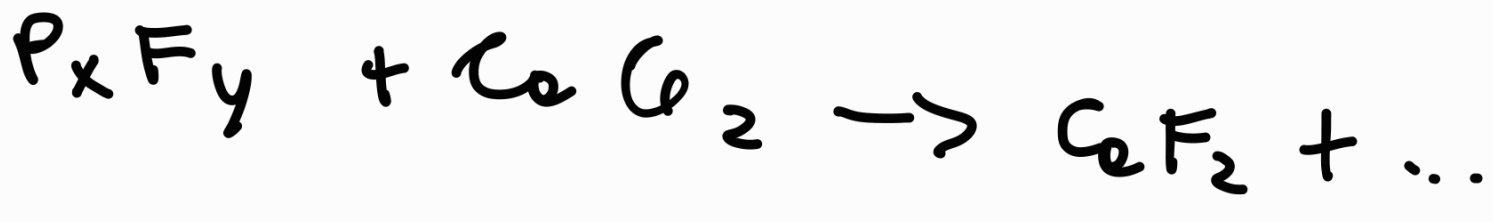
$$= 1.08 \text{ g}$$

$$\% KClO_3 = 100 \cdot \frac{1.08}{1.56} = 69.2\%$$

$$P = 0.128 \text{ atm}$$

$$V = 378 \text{ cm}^3 = 378 \text{ mL} \\ = 0.378 \text{ L}$$

$$M_m = \frac{M \cdot R \cdot T}{P V} = 138 \text{ g/mol}$$



$$M_{CoF_2} = \frac{0.2631}{M_{m CoF_2}} = \frac{0.2631}{78.07}$$

$$= 0.00337 \text{ mol}$$

$$M_F = 2 \cdot M_{CoF_2} = 0.00674 \text{ mol}$$

$$M_F = M_T \cdot 19 \rightarrow PA(F) = M_{mF} = 0.128 \text{ g}$$

$$M_P = M_T - M_F = 0.2324 - 0.128 = 0.1044 \text{ g}$$

$$M_P = \frac{0.1044}{30.97} = 0.00337 \text{ mol}$$

$$\rightarrow PA(F) = M_{mF}$$

$$\frac{M_F}{M_P} = \frac{0.00674}{0.00337} = 2$$

FORMULA MINIMA PF_2

$$n = \frac{138}{69} = 2 \rightarrow M_m$$

$\rightarrow M_m$ FOR MULT MIN/MAX

$$P_2 \neq 4$$