

Clase 71b 6 Enero 2021

Título de la nota

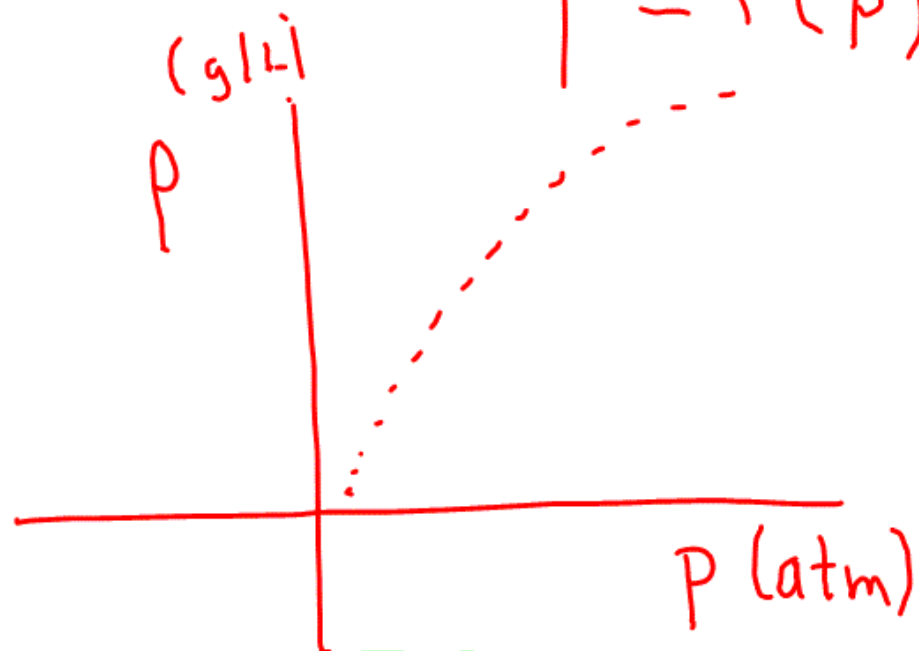
06/01/2021

ρ (g/L)	P (atm)	$T = 25^\circ\text{C}$
1.82	1	$M^?$
3.677	2	.
7.58	4	ec. virial
11.501	6	hasta el
15.668	8	segundo
20.061	10	coeficiente

$$Z = \frac{p\bar{v}}{RT}$$

graficar

$$p = f(p)$$



$$Z = 1 + B'(T)p$$

$$O' = \left[\frac{1 + B(T)}{\bar{v}} \right] \times$$

$$Z = \frac{PV}{nRT}$$

$$n = \frac{m}{M}$$

$$PV = ZnRT$$

$$PV = Z \frac{m}{M} RT$$

$$Z = 1 + B'p$$

$$\frac{PV}{\frac{m}{M} RT} = Z$$

$$Z = 1 + B'p$$

$$\frac{PV}{\frac{m}{M} RT} = 1 + B'p$$

$$= 1 + B'p$$

$$p = \frac{m}{V}$$

$$\frac{pV}{\frac{m}{M}RT} = 1 + B'p \quad p = \frac{m}{V}$$

$$\frac{pV}{m} = \frac{RT}{M} [1 + B'p]$$

$$\frac{p}{p} = \frac{RT}{M} [1 + B'p]$$



p (g/L)	p (atm)	$\frac{P}{p}$
1.82	1	0.5494
3.677	2	0.5439
7.58	4	0.5277
11.501	6	0.5216
15.668	8	0.5105
20.061	10	0.4984

$$\frac{P}{p} = \frac{RT}{M} + \frac{RT}{M} B' p$$

$$\frac{\text{atm L}}{g} = \frac{\frac{\text{atm L}}{\text{mol K}}}{\frac{g}{\text{mol}}} + \frac{\frac{\text{atm L}}{\text{mol K}} \text{ atm}^{-1} \text{ atm}}{\frac{g}{\text{mol}}}$$

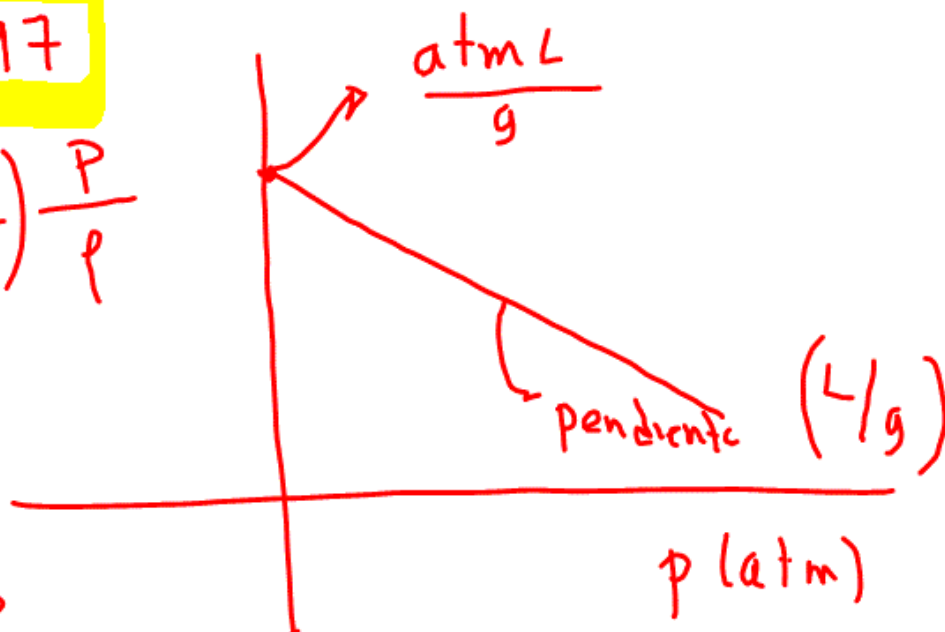
$$\frac{P}{P} = a + bP \quad X = P$$

$$0.5554 = a = \text{ordenada al origen} = \frac{atmL}{g}$$

$$-0.00555 = b = \text{pendiente} = \frac{L}{g} \quad (-)$$

$$r = -0.997$$

$$\left(\frac{atmL}{g}\right) \frac{P}{P}$$



$$y = mx + b$$

$$\frac{P}{p} = a + b p$$

$$a = \frac{RT}{M}$$

$$M = \frac{RT}{a} = \frac{\left(\frac{0.082 \text{ atm} \cdot \text{K}}{\text{mol} \cdot \text{K}}\right) (298.15 \text{ K})}{\left(\frac{0.5554 \text{ atm} \cdot \text{K}}{\text{g}}\right)}$$



gas + H₂O = pH ácido

$$\frac{P}{P} = a + bP$$

$$\frac{P}{P} = \frac{RT}{M} + \frac{RT}{M} B' P$$

$$\frac{RT}{M} B' = b$$

$$\frac{RT}{M} = a$$

$$a B' = b$$

$$B' = \frac{b}{a} = \frac{-0.005554 \text{ K/g}}{0.5554 \text{ atm K/g}}$$

$$B' = -0.01 \text{ atm}^{-1}$$

$$Z = 1 - 0.01 P$$

$$z = 1 - 0.01p$$

$$\ln \Phi = \int_{P_1}^{P_2} \left(\frac{z-1}{P} \right) dp$$

$$\ln \Phi = \int_{P_1}^{P_2} \left(\frac{\cancel{1} - 0.01p - \cancel{1}}{P} \right) dp$$

$$\ln \Phi = -0.01 \int_{P_1}^{P_2} dp$$

$$\ln \Phi = -0.01 \int_{P_1}^{P_2} dp$$

$$\ln \Phi = -0.01 (P_2 - P_1) \quad P_1 = 1 \text{ atm}$$

$$\Phi = e^{-0.01 (P_2 - P_1)}$$

$$f = \Phi P$$

P (atm)	Φ	f	Z
1	1	1	0.99