S T Q Q S S D
L M M J V S D

Respostas da lista de gases

2ª lista

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1º)

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2} \Rightarrow \frac{P_1}{T_1} = \frac{P_2}{T_2}$$

$T_1 = 20°C + 273 = 293K$
$P_1 = ?$
$T_2 = 65°C + 273 = 338K$
$P_2 = 65 PSi \cdot 0,068 = 4,42 atm$

$$\frac{P_1}{293} = \frac{4,42}{338} \Rightarrow P_1 = \frac{1295,06}{338}$$

$P_1 = 3,83 atm$

2º)

a)

$V_1 = 2L$
$T_1 = 25°C + 273 = 298K$
$P_1 = 1 atm$
$V_2 = ?$
$T_2 = 17,5 + 273 = 290,5K$
$P_2 = 0,36 atm$

$$\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2} = \frac{1 \cdot 2}{298} = \frac{0,36 \cdot V_2}{290,5}$$

$$\frac{581}{107,28} = \frac{107,28V_2}{107,28}$$

$V_2 = 5,41L$

b)

$P = 0,36 atm$
$R = 0,082$
$T = 290,5K$
$M = 2 \cdot 16 = 32 g/mol$

$$d = \frac{PM}{RT} \Rightarrow \frac{0,36 \cdot 32}{0,082 \cdot 290,5}$$

$d = 0,48 g/L$

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3º)

$PV = nRT$

$P = 2490\ Psi \Rightarrow 169,43\ atm$

$V = 30L$

$N = ?$

$R = 0,082$

$T = 25°C + 273 = 298K$

$169,43 \cdot 30 = N \cdot 0,082 \cdot 298$

$\frac{5082,9}{24,436} = \frac{N \cdot 24,436}{24,436}$

$N = 208\ mols$

$M = \frac{n}{V} \Rightarrow \frac{208}{30}$

$M = 6,93g$

4º)

$2NaOH + 2Al + 2H_2O \rightarrow 3H_2 + 2NaAlO_2$

$NaOH$	H_2
2	3
0,25	x

$x = \frac{0,25 \cdot 3}{2} \Rightarrow 0,375$

$PV = nRT$

$1V = 0,375 \cdot 0,082 \cdot 298$

$V = 9,16\ L$

$P = 1\ atm$
$V = ?$
$n = 0,375$
$R = 0,082$
$T = 298$

5º)

$P_1 = 250 Psi = 17 atm$

$V_1 = 1L$

$T_1 = 25°C + 273 = 298K$

$P_2 = 2,5 atm$

$V_2 = 2,5L$

$T_2 = ?$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$\frac{17 \cdot 1}{298} = \frac{2,5 \cdot 2,5}{T_2}$$

$$\frac{17 T_2}{17} = \frac{1862,5}{17}$$

$$T_2 = 109,55 K$$