density 1.0 g/mL or 1.0 g/cm³

1.0 kg/L

1 mL = 1 cm³

760 mm Hg, 1.0 atm, 101.3 kPa

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273 K or 0°C

6.02×10^{23}

K − 273 = °C

°C + 273 = K

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I_2

Br_2

Cl_2

F_2

O_2

N_2

H_2

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May 26-12:50 PM

$2\,AgC_2H_3O_2 + K_2CrO_4 \longrightarrow$

$Ag_2CrO_4 + 2KC_2H_3O_2$

$A + B \rightarrow AB$

$AB \rightarrow A + B$

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$2K + 2H_2O \rightarrow 2KOH + H_2$

25.0 g ? g

$25.0\,g\,K \times \frac{1\,mol\,K}{39.1\,K} \times \frac{1\,mol\,KOH}{1\,mol\,K} \times \frac{56.1\,g\,KOH}{1\,mol\,KOH} =$

$= 35.9\,g$

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$10.0\,g\,K \times \frac{1\,mol\,K}{39.1\,g\,K} \times \frac{1\,mol\,H_2O}{1\,mol\,K} \times \frac{18.0\,g\,H_2O}{1\,mol\,H_2O} =$

$= 4.60\,g\,H_2O$

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$.099\,g\,K \times \frac{1\,mol\,K}{39.1\,g\,K} \times \frac{1\,mol\,H_2}{2\,mol\,K} \times \frac{22.4\,L}{1\,mol}$

$= .0284\,L\,H_2$

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LR — Excess

$2K + 2H_2O \rightarrow 2KOH + H_2$

$5.00\,g \quad 7.50\,g \quad ?\,g$

$5.00\,g \times \frac{1\,mol}{39.1\,g} \times \frac{1\,mol\,KOH}{1\,mol\,K} \times \frac{56.1\,g\,KOH}{1\,mol\,KOH} = 7.18\,g\,KOH$

$7.50\,g \times \frac{1\,mol}{18.0\,g} \times \frac{1\,mol\,KOH}{1\,mol\,H_2O} \times \frac{56.1\,g\,KOH}{1\,mol\,KOH} = 23.4\,g$

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→ Combined $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$

→ Grahms

$\frac{75.0\,kPa \times 25.0\,L}{308\,K} = \frac{55.0\,kPa \times V_2}{330\,K}$

$V_2 = 36.5\,L$

$Rate = \sqrt{\frac{m_2}{m_1}}$

$O_2 = 32\,g/mol$

$H_2 = 2\,g/mol$

H_2 is faster $\sqrt{\frac{32}{2}}$

May 26-11:00 AM