

Gases

Practice Problems A

- 177 kPa, 1330 mm Hg
- 7.37×10^6 Pa

Practice Problems B

- 760.0 torr

Practice Problems C

- 1000 mL He

Practice Problems D

- 941 mL
- 91°C

Practice Problems E

- 1.30 atm
- 1.29 atm
- 219°C

Practice Problems F

- 26.3 mL
- 3.94×10^5 Pa; or 394 kPa

Practice Problems G

- 159 L N_2
- 0.629 mol H_2

Practice Problems H

- 9.10 L H_2
- 0.313 L O_2
- 236 L NO

Practice Problems I

- 2.01 atm
- 3.98 atm

Practice Problems J

- CO_2 will effuse about 0.9 times as fast as HCl
- 160 g/mol
- about 235 m/s

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- $T_2 = \frac{P_2 T_1}{P_1}$
- 694 mL

Solutions

Practice Problems A–C

- 0.282 M KI
- 0.0750 mol
- 0.834 L

Practice Problems D

- 22.0 *m* acetone
- 3.13 g CH_3OH

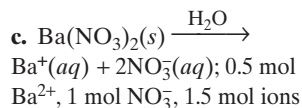
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- 0.700 M Na_2SO_4
- 0.4758 M $\text{Cd}(\text{NO}_3)_2$

Ions in Aqueous Solutions and Colligative Properties

Practice Problems A

- a. $\text{NH}_4\text{Cl}(s) \xrightarrow{\text{H}_2\text{O}} \text{NH}_4^+(aq) + \text{Cl}^-(aq)$; 1 mol NH_4^+ , 1 mol Cl^- , 2 mol ions
- b. $\text{Na}_2\text{S}(s) \xrightarrow{\text{H}_2\text{O}} 2\text{Na}^+(aq) + \text{S}^{2-}(aq)$; 2 mol Na^+ , 1 mol S^{2-} , 3 mol ions



Practice Problems B

- Yes; $\text{Ba}^{2+}(aq) + \text{SO}_4^{2-}(aq) \longrightarrow \text{BaSO}_4(s)$
- No
- Yes; Na^+ and Cl^- ; $\text{Ba}^{2+}(aq) + \text{SO}_4^{2-}(aq) \longrightarrow \text{BaSO}_4(s)$
- $\text{Ni}_2(aq) + \text{S}^{2-}(aq) \longrightarrow \text{NiS}(s)$

Practice Problems C and D

- -0.426°C
- 0.175 *m*
- -118.1°C
- a. -9.0°C
b. 4.8 *m*

Practice Problems E

- 0.15°C
- 102.7°C
- 2.0 *m*
- a. 0.75°C
b. 1.5 *m*

Practice Problems F

- -7.4°C
- 2.6°C
- 0.054 *m* NaCl

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- -4.77°C
- 106.3°C