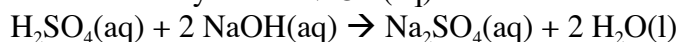


Constants: $R = 8.3145 \text{ J/mol-K} = 0.08206 \text{ L-atm/mol-K}$

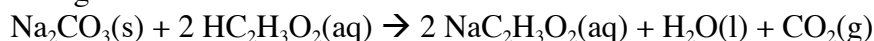
Titration

1. What volume of 0.0962 M NaOH is required to exactly neutralize 10.00 mL of 0.128 M HCl?

2. The exact neutralization of 10.00 mL of 0.1012 M $\text{H}_2\text{SO}_4(\text{aq})$ requires 23.31 mL of NaOH. What must be the molarity of the NaOH(aq)?



3. A 7.55 g sample of $\text{Na}_2\text{CO}_3(\text{s})$ is added to 125 mL of vinegar that is 0.762 M CH_3COOH . Will the resulting solution still be acidic?



Gas Laws

4. A 35.8 L cylinder of Ar(g) is connected to a 1875 L tank. If the temperature is held constant and the final pressure is 721 mmHg, what must have been the original gas pressure in the cylinder, in atm? (1 atm = 760 mmHg)

