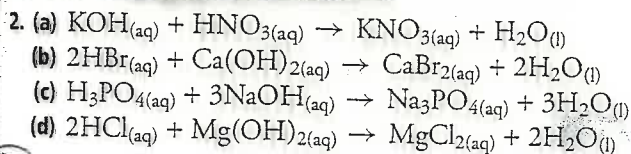


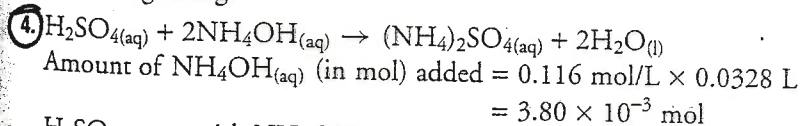
Answers to
Section Review
Pg 404



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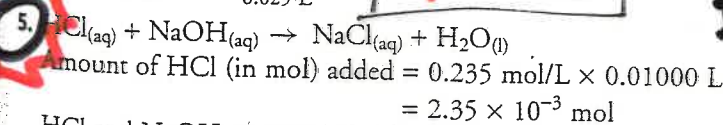
DMX

3. Equivalence point: point in a titration when the number of moles in the standard solution is stoichiometrically equal to the number of moles in the original solution. End-point: point in a titration when the indicator changes colour. End-point is visual, macroscopic; equivalence point is ionic, microscopic. End-point may be incorrectly read before or after the equivalence point and this reality introduces error into any careless titration. This is why it is important to decide on a standard colour before beginning.



H_2SO_4 reacts with NH_4OH in a 1 : 2 ratio so there must be $1.90 \times 10^{-3} \text{ mol}$ of H_2SO_4 .

$[\text{H}_2\text{SO}_{4(aq)}] = \frac{1.90 \times 10^{-3} \text{ mol}}{0.025 \text{ L}} = 7.6 \times 10^{-2} \text{ mol/L}$



HCl and NaOH react in a 1 : 1 ratio so there must be $2.35 \times 10^{-3} \text{ mol}$ of NaOH .

$[\text{NaOH}] = \frac{2.35 \times 10^{-3} \text{ mol}}{2.202 \times 10^{-2} \text{ L}} = 0.107 \text{ mol/L}$

$F = 23.08$
 $I = 1.06$

 22.02 mL

6. Liquid in Erlenmeyer flask is usually a standard solution (known concentration) of known volume (25.0 mL) from a pipette, so it is not necessary to dry the flask.

7. (i) Wash hands immediately with water. Apply baking soda to affected area and thoroughly with water.
 (ii) Remove lab coat and rinse in water. Add washing soda to the rinse water.
 (iii) Pour baking soda or dilute solution of a strong base on lab bench. Wipe thoroughly. Rinse with water.

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1. Acid + Base \rightarrow Salt + water (1)

2. (14) see above



$0.01000 \text{ L} \times \frac{0.235 \text{ mol HCl}}{1 \text{ L}} \times \frac{1 \text{ mol NaOH}}{1 \text{ mol HCl}} = 2.35 \times 10^{-3} \text{ mol NaOH}$

$[\text{NaOH}] = \frac{2.35 \times 10^{-3} \text{ mol NaOH}}{(23.08 - 1.06 \text{ mL}) = 0.02202 \text{ L}} \Rightarrow 0.107 \text{ M NaOH}$ (7)