



Chemical Reactions

Set 10

1. a) $n(\text{Mg}) = \frac{72.0}{24.31}$
 $= 2.96 \text{ mol}$ $M(\text{Mg}) = 24.31 \text{ g mol}^{-1}$
- b) $n(\text{CaCO}_3) = \frac{400.0}{100.09}$
 $= 4.00 \text{ mol}$ $M(\text{CaCO}_3) = 100.09 \text{ g mol}^{-1}$
- c) $n(\text{C}_2\text{H}_2) = \frac{104.0}{26.036}$
 $= 3.99 \text{ mol}$ $M(\text{C}_2\text{H}_2) = 26.036 \text{ g mol}^{-1}$
2. a) $m(\text{Li}) = 4.75 \times 6.941$
 $= 33.0 \text{ g}$ $M(\text{Li}) = 6.941 \text{ g mol}^{-1}$
- b) $m(\text{NaOH}) = 0.25 \times 39.998$
 $= 10.0 \text{ g}$ $M(\text{NaOH}) = 39.998 \text{ g mol}^{-1}$
- c) $m(\text{CO}) = 9.00 \times 28.01$
 $= 252 \text{ g}$ $M(\text{CO}) = 28.01 \text{ g mol}^{-1}$
3. a) $n(\text{N}_2) = \frac{28.0}{28.02}$
 $= 1.00 \text{ mol}$ $M(\text{N}_2) = 28.02 \text{ g mol}^{-1}$
- b) $n(\text{C}_4\text{H}_{10}) = \frac{232}{58.12}$
 $= 3.99 \text{ mol}$ $M(\text{C}_4\text{H}_{10}) = 58.12 \text{ g mol}^{-1}$
- c) $n(\text{Na}_2\text{O}_2) = \frac{3.90}{77.98}$
 $= 5.00 \times 10^{-2} \text{ mol}$ $M(\text{Na}_2\text{O}_2) = 77.98 \text{ g mol}^{-1}$
4. $n(\text{H}_2\text{O}_2) = \frac{119.0}{34.016}$
 $= 3.50 \text{ mol}$ $M(\text{H}_2\text{O}_2) = 34.016 \text{ g mol}^{-1}$
5. $n(\text{C}_{12}\text{H}_{22}\text{O}_{11}) = \frac{39.8}{342.296}$
 $= 0.116 \text{ mol}$ $M(\text{C}_{12}\text{H}_{22}\text{O}_{11}) = 342.296 \text{ g mol}^{-1}$