# SAMPLE PROBLEM : % REACTION

Find the % reaction and write the expression if 6.90 g of $H_{2(g)}$ and 32.0 g of $O_{2(g)}$ react to form 25.75 g of ice at - 70 C°.

$$2H_{2(g)} + O_{2(g)} \overset{71.4\%}{\rightleftharpoons} 2H_2O_{(s)}$$

| | $2H_{2(g)}$ | + $O_{2(g)}$ | $\overset{71.4\%}{\rightleftharpoons}$ | $2H_2O_{(s)}$ |
|---|---|---|---|---|
| init. | 6.90 g | 32.0 g | | |
| eqm. | | | | 25.75 g |

$$\%\text{ rxn} = \frac{\text{exp.}}{\text{theor.}} \times 100\%$$

Find max. product

If $H_2$ is L.R.:

$$6.90\text{g } H_2 \times \frac{1\text{ mol } H_2}{2.02\text{g } H_2} \times \frac{2\text{ mol } H_2O}{2\text{ mol } H_2} \times \frac{18.02\text{g } H_2O}{1\text{ mol } H_2O} = 61.55\text{g } H_2O$$

If $O_2$ is L.R.

$$32.0\text{g } O_2 \times \frac{1\text{ mol } O_2}{32.00\text{g } O_2} \times \frac{2\text{ mol } H_2O}{1\text{ mol } O_2} \times \frac{18.02\text{g } H_2O}{1\text{ mol } H_2O} = 36.04\text{g } H_2O$$

∴ $O_2$ is L.R.

$$\%\text{ rxn} = \frac{\text{exp}}{\text{theor.}} \times 100\%$$

$$\%\text{ rxn} = \frac{25.75\text{g}}{36.04\text{g}} \times 100\%$$

% rxn = 71.4%

# Percent Reaction Worksheet