



1. find g Sn reacted

$$1.044\text{g} - 0.338\text{g} = 0.706\text{g Sn reacted}$$

2. find moles Sn reacted

$$0.706\text{g Sn} \times \frac{1\text{mol}}{118.71\text{g Sn}} = 5.947 \times 10^{-3}\text{ mol Sn}$$

3. find moles nitrobenzene

$$5.947 \times 10^{-3}\text{ mol Sn} \times \frac{3\text{ mol C}_6\text{H}_5\text{NO}_2}{2\text{ mol Sn}} = 3.965 \times 10^{-3}\text{ mol C}_6\text{H}_5\text{NO}_2$$

4. find g nitrobenzene

$$3.965 \times 10^{-3}\text{ mol C}_6\text{H}_5\text{NO}_2 \times \frac{123.11\text{g}}{\text{mol}} = \boxed{0.488\text{g C}_6\text{H}_5\text{NO}_2}$$

5. Extra; what % of the original sample was $\text{C}_6\text{H}_5\text{NO}_2$

$$\frac{0.488\text{g}}{0.578\text{g}} \times 100\% = 84.4\%$$