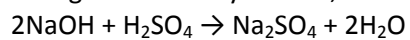


## Answer on Question #40466, Chemistry, Other

### Question

In the following reaction, how many grams of sulfuric acid,  $\text{H}_2\text{SO}_4$ , will be needed to react with 87.3 g of sodium hydroxide,  $\text{NaOH}$ ?



### Answer

Stoichiometric ratio:

$$n(\text{H}_2\text{SO}_4):n(\text{NaOH}) = 1:2 = 0.5$$

Mass ratio:

$$\begin{aligned} m(\text{H}_2\text{SO}_4):m(\text{NaOH}) &= [M(\text{H}_2\text{SO}_4) \cdot n(\text{H}_2\text{SO}_4)]:[M(\text{NaOH}) \cdot n(\text{NaOH})] = [M(\text{H}_2\text{SO}_4)/M(\text{NaOH})] \cdot \\ &[n(\text{H}_2\text{SO}_4):n(\text{NaOH})] = [98/40] \cdot 0.5 = 1.225 \end{aligned}$$

$$m(\text{H}_2\text{SO}_4):m(\text{NaOH}) = 1.225; m(\text{H}_2\text{SO}_4) = 1.225 \cdot m(\text{NaOH}) = 1.225 \cdot 87.3 \text{ g} = 106.9 \text{ g}.$$

**Answer: 106.9 g**