

### Answer on Question #38295-Chemistry-Other

#### Question

Lead II nitrate and sodium iodide react to form sodium nitrate and lead II iodide. The balanced chemical equation is  $\text{Pb}(\text{NO}_3)_2 + 2\text{NaI} \rightarrow 2\text{NaNO}_3 + \text{PbI}_2$ . How many moles of sodium iodide react with 250 grams of lead II nitrate?

#### Solution

Number of moles of lead II nitrate is

$$n_{LN} = \frac{m_{LN}}{M_{LN}} = \frac{250}{331.2} = 0.755 \text{ mole},$$

where  $m_{LN}$  – mass of lead II nitrate,  $M_{LN}$  – molar mass of lead II nitrate.

As is clear from the balanced chemical equation 1 mole of lead II nitrate reacts with 2 moles of sodium iodide. That is why number of moles of sodium iodide is twice greater than number of moles of lead II nitrate:

$$n_{SI} = 2 \cdot n_{LN} = 2 \cdot 0.755 = 1.510 \text{ moles}$$

Answer: 1.510 moles