Mass to Mass Stoichiometry Problems

In the following problems, calculate how much of the indicated product is made. Show all your work.

1) LiOH + HBr \rightarrow LiBr + H₂O

If you start with 10.0 grams of lithium hydroxide, how many grams of lithium bromide will be produced?

2) $C_2H_4 + 3 O_2 \rightarrow 2 CO_2 + 2 H_2O$

If you start with 45 grams of ethylene (C_2H_4), how many grams of carbon dioxide will be produced?

3) Mg + 2 NaF \rightarrow MgF₂ + 2 Na

If you start with 5.5 grams of sodium fluoride, how many grams of magnesium fluoride will be produced?

4) 2 HCl + Na₂SO₄ \rightarrow 2 NaCl + H₂SO₄

If you start with 20 grams of hydrochloric acid, how many grams of sulfuric acid will be produced?

Mass to Mass Stoichiometry Problems – Answer Key

In the following problems, calculate how much of the indicated product is made. Show all your work.

1) LiOH + HBr \rightarrow LiBr + H₂O

If you start with 10.0 grams of lithium hydroxide, how many grams of lithium bromide will be produced? **36.3 grams**

2) $C_2H_4 + 3 O_2 \rightarrow 2 CO_2 + 2 H_2O$

If you start with 45 grams of ethylene (C_2H_4), how many grams of carbon dioxide will be produced? **140 grams**

3) Mg + 2 NaF \rightarrow MgF₂ + 2 Na

If you start with 5.5 grams of sodium fluoride, how many grams of magnesium fluoride will be produced? **4.1 grams**

4) 2 HCl + Na₂SO₄ \rightarrow 2 NaCl + H₂SO₄

If you start with 20 grams of hydrochloric acid, how many grams of sulfuric acid will be produced? **30 grams (rounded from 27 grams for significant figures)**