

## Conservation of Mass Fill in the Blanks Worksheet

1. With the help of the law of conservation of mass, fill in the blanks with the correct values.

- i) 40g of Ca reacts with 71g of  $\text{Cl}_2$  to produce \_\_\_\_\_ g of  $\text{CaCl}_2$ .
- ii) 65.5g Cu reacts with \_\_\_\_\_ g  $\text{O}_2$  to produce 81g  $\text{Cu}_2\text{O}$ .
- iii) \_\_\_\_\_ g of Na reacts with 71g  $\text{Cl}_2$  to produce 117g NaCl.
- iv) 78g of K reacts with \_\_\_\_\_ g of  $\text{O}_2$  to produce 94g of  $\text{K}_2\text{O}$ .
- v) \_\_\_\_\_ g of Ba reacts with 254g  $\text{I}_2$  to produce 391g  $\text{BaI}_2$ .
- vi) 14g of Li reacts with 32g S to produce \_\_\_\_\_ g of  $\text{Li}_2\text{S}$ .
- vii) 88g of Sr reacts with \_\_\_\_\_ g  $\text{Br}_2$  to produce 248g  $\text{SrBr}_2$ .

2. Use the law of conservation of mass to fill in the blanks with the correct answers.

According to the law of conservation of mass, mass is never \_\_\_\_\_ or \_\_\_\_\_ during a chemical reaction. It may change from one state of matter to another, but the overall mass remains \_\_\_\_\_. For instance, when lead nitrate ( $\text{Pb}(\text{NO}_3)_2$ ) reacts with potassium iodide (KI), a yellow solid is observed. This yellow solid is \_\_\_\_\_, and while initially, it appears that the mass of the products has decreased, the solution in which the solid has precipitated contains \_\_\_\_\_. This is because \_\_\_\_\_ is water soluble and has \_\_\_\_\_ as a solution. If we were to consider the solution's weight, we would find that the mass of the reactants is \_\_\_\_\_ as the products.

3. Consider the following balanced equation:



Fill in the blanks with the weight of Mg that took part in the reaction.

Mass \_\_\_\_\_ 32g 80g

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### Answers

- 40g of Ca reacts with 71g of  $\text{Cl}_2$  to produce 111 g of  $\text{CaCl}_2$ .
  - 65.5g Cu reacts with 15.5 g  $\text{O}_2$  to produce 81g  $\text{Cu}_2\text{O}$ .
  - 46 g of Na reacts with 71g  $\text{Cl}_2$  to produce 117g NaCl.
  - 78g of K reacts with 16 g of  $\text{O}_2$  to produce 94g of  $\text{K}_2\text{O}$ .
  - 137 g of Ba reacts with 254g  $\text{I}_2$  to produce 391g  $\text{BaI}_2$ .
  - 14g of Li reacts with 32g S to produce 46 g of  $\text{Li}_2\text{S}$ .
  - 88g of Sr reacts with 160 g  $\text{Br}_2$  to produce 248g  $\text{SrBr}_2$ .

2.

According to the law of conservation of mass, mass is never created or destroyed during a chemical reaction. It may change from one state of matter to another, but the overall mass remains unchanged. For instance, when lead nitrate ( $\text{Pb}(\text{NO}_3)_2$ ) reacts with potassium iodide (KI), a yellow solid is observed. This yellow solid is lead iodide ( $\text{PbI}_2$ ), and while initially, it appears that the mass of the products has decreased, the solution in which the solid has precipitated contains potassium nitrate ( $\text{KNO}_3$ ). This is because  $\text{KNO}_3$  is water soluble and has dissolved as a solution. If we were to consider the solution's weight, we would find that the mass of the reactants is the same as the products.

3.



Fill in the blanks with the weight of Mg that took part in the reaction.

Mass 48g 32g 80g