**Magnesium + HCl Reaction***Interpreting Chemical Equations*

Chemical equations are used to show chemical reactions and how much of a reactant is needed and how much of a product is produced. Not only do chemical equations provide evidence that matter is being chemically changed (resulting in new substances with different properties), but they also provide evidence that matter is NOT lost during a reaction (meaning that mass is not created or destroyed).

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| --- | --- | --- | --- |
| **Observations** | | | |
|  | **BEFORE POUR** | | **AFTER POUR** |
| **Chemical** | *Magnesium metal* | *Hydrochloric acid* | ???? |
| **Observations** |  |  |  |
| Mass of system: | | Mass of system: |

When magnesium metal shavings are added to hydrochloric acid, a white precipitate, magnesium chloride, and flammable hydrogen gas are produced

Mg(s) + 2HCl(l) 🡪 MgCl2(aq) + H2(g)

1. Box the reactants and circle the products.
2. What is the chemical formula for the gas that is formed as a result of this reaction? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Analyze the number of atoms within the reaction by completing the table below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Before- REACTANTS** | | **After- PRODUCTS** | |
| **Chemical Name and**  **Chemical Formula** | Magnesium metal  Mg(s) | Hydrochloric acid  2HCl | Magnesium chloride  MgCl2(aq) | Hydrogen gas  H2(g) |
| **Counting Atoms** |  |  |  |  |
| **Molecular Model**  ***of ONE Molecule*** |  |  |  |  |

*Use evidence from the demonstration to defend the claims below about chemical reactions.*

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| **CLAIM** | **EVIDENCE** |
| *During a chemical reaction, atoms will rearrange, causing new substances to be formed****.*** |  |
| *During a chemical reaction, matter is neither created nor destroyed* |  |