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# Signs of a Chemical Reaction From Lab Experiments

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Chemical reactions involve the rearrangement of atoms within molecules to produce new compounds. As the atoms of a compound are rearranged in a chemical reaction, energy is released and absorbed as bonds are created and broken, resulting in a net change of energy.

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## Sign #1 – Temperature change

One form of the energy released or absorbed in a chemical reaction is heat. Exothermic reactions release heat energy (raise temperature) whereas endothermic reactions absorb heat (lower temperature).

## Sign # 2 – Light

Light is another form of energy. Some energy released in a chemical reaction may take the form of light. If it is the right amount of energy you may see it as colored light.

## Sign #3 – Gas is formed

The appearance of gas bubbles may indicate a chemical change when a product of the reaction is released as a gas. Note, though, that gas bubbles also form at the boiling point of a substance, which is not a chemical change.

## Sign #4 – Precipitate is formed

In solutions, a reaction may result in the appearance of a precipitate, an insoluble material that appears in a liquid. Freezing a liquid into a solid, though, is not a chemical reaction.

## Sign #5 – Color change

Many reactions will produce a color change in the reactants. This color change indicates the occurrence of a chemical reaction. Sometimes the reactants will go from clear to colored, or colored to clear.