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Can You Undo a Chemical Change?



Have you ever baked cookies, watched a fire, or seen a rusting bike? If so, you've witnessed chemical changes. A chemical change happens when a substance turns into something new. But can a chemical change ever be reversed? Let's find out.

When something changes chemically, it means the tiny particles that make it up—called molecules—are rearranged. For example, when you bake cookie dough, heat causes the ingredients to combine in a new way. You can't unbake a cookie

and get back the raw dough. That's because a new substance has formed. This kind of change is usually permanent.

Burning wood is another chemical change. Once the wood turns to ash, it cannot become wood again. Rusting is also a chemical change. Oxygen from the air reacts with the metal to form rust. You can't simply wipe the rust off to return the metal to its original state.

However, some chemical changes can be reversed—but only in special cases. Scientists can sometimes use another chemical reaction to undo the first one. For example, some batteries use chemical changes to make electricity. When you recharge a battery, the reaction is reversed so the battery can be used again.

Even though it's possible in a lab, most chemical changes in everyday life are permanent. That's one way to tell them apart from physical changes. A physical change, like melting ice or cutting paper, doesn't make something new, and it can usually be reversed.

So, can a chemical change ever be undone? Sometimes—but not easily. Most chemical changes are one-way streets. They take you forward, not back.