

Name _____



The Truth About Saltwater

When you look at a glass of saltwater, it might seem like it's just one thing. It looks clear, smooth, and perfectly mixed. But did you know it's not a pure substance? Even though it looks like one, saltwater is actually a mixture.

A pure substance is made of only one kind of material. That could be a single element, like gold or oxygen, or a compound, like water or carbon dioxide. In a pure substance, the parts are always the same. They have the same makeup and the same properties every time.

Saltwater is different. It's a solution, which is a special kind of mixture. It's made of water (H₂O) and salt (sodium chloride). These two substances do not form a new compound. The salt dissolves in the water, but it doesn't bond with it. That means it can be taken apart again.

If you leave saltwater out in the sun, the water will slowly disappear, or evaporate. What's left behind? The salt! That's a clue that saltwater is a mixture. In a pure substance, you wouldn't be able to separate it like that.

Another clue is that the amount of salt in saltwater can change. In the ocean, some places have saltier water than others. That wouldn't be possible with a pure substance, where the formula must always stay the same.

Even though it looks like one smooth liquid, saltwater is actually made of two different parts. That's why scientists call it a mixture. And that's why it's not considered a pure substance.

Understanding the difference between mixtures and pure substances helps scientists, cooks, doctors, and engineers. Whether you're making medicine or mixing a drink, knowing what you're working with makes all the difference!