

Matter

Chemistry Essay

A scientist may mix together chemicals and wonder “What is this? What are these classified as, and why do they change?” To chemistry, the objects are matter, the building blocks of the universe and the ingredients of existence, structures that commonly come in the form of solids, liquids, and gasses. Matter cannot be created or destroyed; it is simply eternal. While it may be eternal, and is anything taking up any amount of space with a measurement of mass, it doesn’t always remain the same; it can change. Not only can its properties change due to physical and chemical reactions, but systems of energy come into play to interact with these atomic structures.

Properties of matter aren’t just characteristics; they are parts of matter that can or cannot change. Intensive properties confirm components of matter that aren’t altered despite how much of that matter is present. An example of one of those many properties is color. If several blocks of iron were to be contained in a box, no matter how much iron is in the box, the metal’s grey color does not change. However, the other type of property, extensive properties, does indeed alter based on the amount of matter present. A fine example: weight. If the box full of iron was put onto a weighing scale, the measurement of gravity attracting objects towards Earth (weight) would change if any said amounts of iron were to be added or subtracted to the box. While extensive and intensive properties show matter’s characteristics, they don’t change the substance; however, the third property known as a chemical property spawns from change. Rust isn’t just a red-colored material that forms on metal; it is a chemical property commonly found on iron. Rust forms on iron when the metal gives up its electrons to oxygen and causes water particles to interact ($O_2 + 4e + 2H_2O + 4OH$), and is a chemical property gained from this reaction. The properties of matter explain what characteristics it has. But, they only change from reactions.

Reactions are processes chemists study and are significant to chemistry in how they show particles that interact with change. Physical changes show how natural and intelligent forces act upon matter. Bending an object is one type of force. If a refined block of element 79 (commonly known as gold) is bent, it does not change the gold into