Chemistry Is Everywhere

Everything you hear, see, smell, taste, and touch involves chemistry and chemicals (matter). And hearing, seeing, tasting, and touching all involve intricate series of chemical reactions and interactions in your body. With such an enormous range of topics, it is essential to know about chemistry at some level to understand the world around us.

In more formal terms chemistry is the study of matter and the changes it can undergo. Chemists sometimes refer to matter as ‘stuff’, and indeed so it is. Matter is anything that has mass and occupies space. Which is to say, anything you can touch or hold. Common usage might have us believe that ‘chemicals’ are just those substances in laboratories or something that is not a natural substance. Far from it, chemists believe that everything is made of chemicals.

Although there are countless types of matter all around us, this complexity is composed of various combinations of some 100 chemical elements. The names of some of these elements will be familiar to almost everyone. Elements such as hydrogen, chlorine, silver, and copper are part of our everyday knowledge. Far fewer people have heard of selenium or rubidium or hassium.

Nevertheless, all matter is composed of various combinations of these basic elements. The wonder of chemistry is that when these basic particles are combined, they make something new and unique. Consider the element sodium. It is a soft, silvery metal. It reacts violently with water, giving off hydrogen gas and enough heat to make the hydrogen explode. Nasty ‘stuff’. Also consider chlorine, a green gas when at room temperature. It is very caustic and choking, and is nasty enough that it was used as a horrible chemical gas weapon in the last century. So what kind of horrible mess is produced when sodium and chlorine are combined? Nothing more than sodium chloride, common table salt. Table salt does not explode in water or choke us; rather, it is a common additive for foods we eat everyday.

And so it is with chemistry, understanding the basic properties of matter and learning how to predict and explain how they change when they react to form new substances is what chemistry and chemists are all about.

Chemistry is not limited to beakers and laboratories. It is all around us, and the better we know chemistry, the better we know our world.