

Chromatography: Solving Real World Mysteries

Human beings have always been mesmerized by solving mysteries. We love mystery novels and crime dramas because we want to deduce who the culprit is. In real life, advances in science also deal with unraveling a mystery. Instead of private investigators, processes like chromatography often solve real-world mysteries.

Chromatography is a technique that helps scientists, law enforcement, and even schools and companies verify the composition of a particular sample. Basically, scientists need a way to separate organic from inorganic compounds. The word itself means "color writing" and the method was developed in the initial part of the twentieth century. But since the 1950's, chromatography has rapidly developed as an important tool for the tricky job of analyzing materials and samples of unknown mixtures.

Although many different laboratory techniques fall under the general heading of chromatography, they all share the common process of separating mixtures. A solvent carries the mixture to be evaluated through some kind of stationary material. As the mixture passes through the material, the analyte -- the substance that needs to be identified -- is separated and can be discovered.

There are several different types of chromatography that have a wide range of uses. Liquid Chromatography can be used to check water for pollution levels, while Gas Chromatography is used to test materials as varied as fibers or determine the presence of bombs at an airport. Thin-layer Chromatography provides a quick way to determine if foods contain insecticides or pesticides. Although these examples are all quite a bit different, the process is the same. A mixture is broken down, and by other chemicals and processes, unknown elements in the mixture are identified.

Chromatography is a useful tool that we have developed to answer important questions involving health and public safety. Through the use of controlled chemical interactions and reactions, chromatography helps us get to the bottom of things.

About the Author

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