**FORENSIC CHEMIST**

  
Forensic Chemistry is defined as, “field of chemistry dedicated to the analysis of various substances that might be important or might have been used in the commission of a crime.” A forensic chemist is someone who is called in to analyze non-biological trace evidence found at crime scenes to identify unknown materials and match samples to known substances.

A forensic chemist generally works in a lab and is hired by the government, whether it be local, state or government. While in the lab they run tests on samples that have been collected by investigators. Some techniques that they use are optical analysis which includes UV, infrared, and X-ray, and gas chromatography. These techniques play a role in the investigation. Ultra Violet (UV) spectrometry helps distinguish between samples of proteins and nucleic acids such as deoxyribonucleic acid or DNA. Infrared spectrophotometry is especially useful for the identification of organic compounds, as bonds between certain atoms readily absorb infrared radiation or IR. X-rays makes it possible for the investigator to see if there or foreign objects in the body of a victim. Gas chromatography (GC) separates volatile substances into separate components by passing the volatile materials through a long absorbent column. This is the most reliable technique and is highly reproducible, as each sample is likely to contain a definite number of impurities. GC is often connected to a mass spectrometer. Mass Spectrometry (MS) breaks samples apart and separates the ionized fragments by mass and charge. Another method that can be used that is also connected to MS is High Pressure Liquid Chromatography (HLPC) separates different types of drugs.

Generally, forensic chemists are trained in organic chemistry. This is so that the forensic chemists can run analysis on blood and other body samples to identify DNA. They are also trained in organic chemistry so that they can run toxicology screenings. It is also important for a forensic chemist to have knowledge of physics. This is important because even though most of a forensic chemists’ work takes place in the lab there are times when a forensic chemist who is familiar with physics is called to the crime scene to examine blood patterns to determine if injury was intentional or accidental. There are also forensic chemists who specialize in certain areas, such as in chemicals that are tied to explosives or arson. These chemists will be called to the crime scene to look at fire patterns when it comes to determining if arson was involved in a fire or they will be called to investigate chemicals associated with a bomb.

To become a forensic chemist, you must possess at minimum a bachelor’s degree. If a forensic chemist wants to teach others, they will need to have a master’s degree or a PHD. Once becoming a forensic chemist, there are many places where a forensic chemist could work. A forensic chemist could work for a private lab, or at a national agency like the FBI. Forensic chemist can also work at police departments, fire departments, in the military, or at a coroner’s office.

http://www.crimemuseum.org/crime-library/forensic-chemist