



## Criminalistics Section – 2004

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### **B15 Illicit Methamphetamine Profiling**

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The attendee will understand the complexity of clandestine laboratory phenomenon and will be able to interpret the byproducts associated with specific clandestine methamphetamine manufacturing process.

In clandestine methamphetamine laboratories the most frequently encountered synthetic method is reduction of ephedrine. Due to diastereomeric nature of the ephedrines the stereospecificity of the reduction is responsible for different possible mechanisms. Two major reduction methods will be taken under consideration, the HI/red P I method and lithium-liquid ammonia known as a Birch or "Nazi" method. Ephedrine reacts with HI to form iodomethamphetamine. This compound can cause a ring closure to form aziridines through internal substitution catalyzed by alkali or heat. The aziridines can undergo a ring opening caused by acidic hydrolysis to form phenyl-2-propanone, which subsequently dehydrates to form naphthalenes. Methamphetamine sample produced using the lithium-ammonia reduction method may contain derivative of propanamine as a byproduct. Spectral data via GC/MS spectrometry will be presented to aid in the analysis of precursors, intermediates, and rearrangements.

#### **Ephedrine, Methamphetamine, Clandestine Laboratory**