



## Criminalistics Section – 2004

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### **B6 Advancements Pertaining to the Physical Developer Process**

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After attending this presentation, attendees will understand how latent fingerprints are developed on porous surfaces with the use of physical developer.

This presentation will demonstrate the reduction in cost of physical developer along with improved latent fingerprint development.

The silver physical developer (Ag-PD) is a water-based reagent that is commonly used to develop latent fingerprints on porous surfaces. It usually follows DFO and/or ninhydrin in the processing of latent prints. The Ag-PD reacts with certain water-insoluble components of latent print residue (e.g., lipids) while both DFO and ninhydrin are solventbased reagents that react with certain water-soluble components (e.g., amino acids). The Ag-PD works by depositing silver on "triggering" (catalytic) sites in the latent print residue. The Ag-PD consists of silver nitrate, citric acid, surfactants, and a mixture of ferrous and ferric salts, of which the ferrous ions act as reducing agents for the silver ions. Recent changes were made to the Ag-PD when highly purified water was substituted for distilled water. These changes resulted in better performance and a *reduction* in components used and thus, a reduction in cost. This presentation will cover the approach taken in making the changes and the improvements they made.

#### **Fingerprints, Physical Developer, Porous Surfaces**