



### **B47 The Use of Liquid Latex for Soot Removal From Fire Scenes and Attempted Fingerprint Development With Ninhydrin**

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The goal of this presentation is to illustrate the application of liquid latex for soot removal from fire scenes, and fingerprint recovery with subsequent chemical applications.

This presentation will impact the forensic community by enabling investigators to perform additional chemical processes to recover fingerprints. Fire investigators and crime scene specialists have a better chance of finding fingerprints at a fire scene if they can successfully remove soot from the exterior surfaces.

Fires accounted for 3,675 deaths and approximately 10.7 billion dollars worth of property loss in the United States in 2005. Of the 1.6 million fires that were reported, 52,500 of these were classified by law enforcement agencies as arson. Unfortunately, the clearance rate for arson cases remains low, largely due to the destructive nature of the fire itself, subsequent fire-fighting measures taken, and the misconception by fire investigators that there is no forensic evidence left at the scene. Recent research supports the theory that amino acids found in fingerprint deposits survive high temperatures, suggesting that prints could be yielded from fire scenes if the soot layers were properly removed prior to chemical printing processes. However, several previously published methods of soot removal have potentially detrimental effects to fingerprint and DNA evidence that might be present. Scotland Yard has developed a method of applying liquid latex upon a surface, that, when peeled, removes soot, but no such research has been attempted in the United States. An experiment was conducted to assess the application of liquid latex to drywall and glass panes, and its potential to yield fingerprints after the soot was removed. Results of this study supported previous research on the success of soot removal, and also yielded usable fingerprints within the soot itself prior to soot removal techniques. While the Ninhydrin application did not provide additional print detail, more research in this area is suggested to improve the likelihood of finding fingerprint evidence at fire scenes.

#### **Arson, Soot Removal, Fingerprints**