Forensic Chemistry Section

Miscellaneous Evidence Examination Method

1. Scope

The laboratory routinely analyzes miscellaneous evidence types which may include but are not limited to cosmetics, oils, fabric impressions, tapes, plastic bags, polymers and adhesives. This document outlines the general evidence handling scheme for these miscellaneous evidence types. The examiner will use discretion to determine which analysis methods are most appropriate.

2. Safety

2.1 The examiner will wear a disposable laboratory coat and disposable gloves as necessary.

2.2 The examiner will wear cryogenic gloves and safety goggles when using liquid nitrogen.

3. Evidence Examination

3.1 The examination of questioned samples may include, but is not limited to the following examination types until a point where the examiner concludes that questioned and known samples are dissimilar. If no such conclusion is reached, the examiner will determine the samples to be similar.

- macroscopic examination
- stereomicroscopic examination
- microscopic examination
- polarized light microscopy
- comparison microscopy
- microspectrophotometry
- infrared microspectrometry

3.2 The examiner will determine a scheme for examination based on the type, and amount of sample.

3.3 The examiner will first perform a macroscopic examination.

3.4 When applicable, the examiner will examine the known and questioned samples side by side both visually and stereromicroscopically to determine if further examination is necessary.

3.5 Evidence that appears to have color, such as cosmetics, may be examined with the microspectrophotometer and compared to a known sample. The resulting spectra will be included in the case folder.

3.6 Particle type samples will be analyzed microscopically. If a known sample exists, the comparison microscope will be used to perform side-by-side microscopic comparisons.

3.7 Particle type samples may also be analyzed using a polarizing light microscope.

3.8 The comparison will be documented in the examiner's notes. The examiner may choose to also include color prints or photographs.

3.9 Evidence requiring chemical composition determination or comparison will be analyzed using the FTIR microspectrometer. Resulting spectra will be included in the case folder.

3.10 Samples which need interpretation will be compared to spectral libraries present in the software.

3.11 Fabric impressions examination will include direct comparison of the impression to the fabric sample. The examiner may use dusting, inking, and/or photography to better see and compare the fabric pattern.

3.12 Plastic bag examination will include a side-by-side comparison and stereomicroscopic examination. Comparisons may also include FT-IR microspectrometer analysis.