Forensic Chemistry Section

Fire Debris Solvent Extraction

1. Scope

Solvent extractions may be employed in the following situations:

- the range of a heavy petroleum product becomes important;
- artifacts, such as preferential adsorption, are suspected in the charcoal strip extract;
- a small amount of liquid is suspected such as on top of a water layer or at the bottom of a jar and the most effective means of removal is with a solvent wash.

Other situations may present where a solvent extraction is the most reasonable extraction method.

2. Safety

2.1 Solvent extractions will be performed in the laboratory fume hood with the sash lowered to protect the eyes of the examiner. If the sash cannot be lowered enough to protect the examiner's eyes, safety glasses will be worn.

2.2 Disposable laboratory coats will be worn when performing solvent extractions.

2.3 The examiner will wear 6 mil or thicker nitrile gloves while performing solvent extractions.

3. Method

3.1 The examiner will wash the debris with pentane either in the evidence container or an evaporating dish or other appropriate container.

3.1.1 The debris will be removed from the solvent either manually or by filtering the solvent.

3.1.2 If a solvent extraction is required on a liquid sample, a separatory funnel will be used.

3.2 Having removed the debris from the solvent, the examiner will evaporate the solvent extract to approximately 2 ml.

3.3 The examiner may or may not dilute the solvent extract, however dilutions will be noted.

3.4 A charcoal strip will be placed in each unprocessed solvent extract, including dilutions, for long term storage.