

	<b>EXP-PM 2.4 Low Explosives Burned &amp; Post-Blast Residues Procedures</b>	
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	Document Manager: Cheryl Lozen	Approved By: Jeffrey Nye

## 2.4.1 Introduction

The following procedures are designed for cases when the device has functioned, and no unburned low explosive powder(s) are present.

Information should be obtained from the bomb squad or investigator that could benefit the analyst in identifying the explosive used.

Characteristics of the exploded device and/or fractures of the device may assist the examiner in determining the type of explosive powder that was utilized in the device (see section 2.2.4).

Utilizing the characteristics of the exploded device and information from the bomb squad or investigator, the analyst may be able to proceed to an alternate point within the following procedure.

## 2.4.2 Safety Considerations

See Safety Considerations 2.1.2

## 2.4.3 Equipment and Instrumentation

See Equipment and Instrumentation, section 2.2.3

## 2.4.4 Minimum Standards & Controls

Blanks should be processed with the same procedure used for the samples.

## 2.4.5 Procedure for Analysis

*Note: Depending on the amount of material or residue present on the evidence and to obtain the most information, the analyst may choose one or more of the solvents to extract for instrumental analysis.*

### 2.4.5.1 Visible Material Other Than Residue

Search evidence for unburned particles (if unburned particles are found, proceed to Section 2.3).

Record physical characteristics of any material found on IED fragments or surfaces of evidence.

If sufficient material is present on the evidence, it can be extracted using the following solvents (see Section 2.2.5 for extraction technique) for further analysis (if the dried extract yields no visible material/residue, no further analysis of that extract is required):

1. Deionized water
  - a. Instrumental analysis
    - i. IC  
and
    - ii. SEM/EDS and/or XRF

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- iii. FTIR (optional)
- 2. Methylene chloride
  - a. Instrumental analysis
    - i. GC/MS  
or
    - ii. SEM/EDS or XRF
- 3. Acetone or Methyl Alcohol
  - a. Instrumental analysis:
    - i. GC/MS  
and/or
    - ii. FTIR
- 4. Particles or Insoluble material -- stereomicroscopic exam (for possible metallic particles - SEM/EDS or XRF if found)

#### 2.4.5.2 Residue Only or No Visible Material

If there is visible material present on the evidence which cannot be physically removed, or if there is no visible material on the evidence, the surface areas can be washed using extraction solvent(s) (see Section 2.2.5 for extraction technique) in an effort to obtain residue for further analysis (if the dried extract yields no visible material/residue, no further analysis of that extract is required).

:

- 1. Deionized water
  - a. Instrumental analysis
    - i. IC  
and
    - ii. SEM/EDS and/or XRF
    - iii. FTIR (optional)
- 2. Methylene chloride
  - a. Instrumental analysis
    - i. GC/MS  
or
    - ii. SEM/EDS or XRF
- 3. Acetone or methyl alcohol
  - a. Instrumental analysis
    - i. GC/MS

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- and/or
- ii. FTIR

## 2.4.6 References

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