

FBI Approved Standards for Scientific Testimony and Report Language for Explosives Chemistry and Fire Debris Analysis

1 Purpose

This document provides examples of the scientifically-supported conclusions and opinions approved for reporting examination conclusions and offering expert witness opinion statements during testimony by examiners who conduct explosives chemistry and fire debris examinations in the FBI Laboratory. These examples are not intended to be all inclusive and may be dependent upon the precedent set by the judge or locality in which a testimony is provided. These examples are not intended to serve as precedent for other forensic laboratories and do not imply that statements by other forensic laboratories are incorrect, indefensible, or erroneous.

2 Scope

This document applies to examiners who prepare *Laboratory Reports* (7-1, 7-1 LIMS, 7-273, 7-273 LIMS), and/or provide expert witness testimony in explosives chemistry and fire debris analysis. This document does not apply to employees who provide fact witness testimony.

3 Responsibilities

- 3.1** The examiner will ensure that a *Laboratory Report* complies with the statements contained within this document, when applicable.
- 3.2** The examiner will ensure that his/her testimony is consistent with the standards contained within this document, when applicable.

4 Statements Approved for FBI Explosives Chemistry and Fire Debris Analysis Testimony and/or Laboratory Reports

For more detailed guidance on explosives chemistry and fire debris report writing, see the Explosives Chemistry and Fire Debris Report Writing Guidelines procedures.

1. The examiner may report analytical findings and/or state opinions/conclusions about the presence or absence of a targeted chemical or product (e.g., explosives, explosive precursors, explosive reaction products, ignitable liquid residues, general unknowns).
2. The examiner may report and/or state opinions as to the identification or chemical classification (if identification was not achieved) of a substance. The examiner may also

report and/or state the general properties and potential uses of the substance or class of substances.

3. The examiner may report and/or state an opinion that the conclusions apply to the entirety of an item (or a percentage of the item) when there is a reasonable assumption of homogeneity of the item or an appropriate sampling plan was used.
4. The examiner may report results of examinations and/or state opinions/conclusions regarding a chemical comparison that was performed between items, provided that the opinions/conclusion are supported by the appropriate chemical analyses.
5. The examiner may report and/or state a determined quantity of a substance (e.g., weight, volume, purity, concentration) when a validated quantitative method was used. The reported/stated quantity will include an associated estimated measurement uncertainty and confidence level.
6. The examiner may report and/or state an opinion about an estimated quantity of a substance (e.g., weight, volume, purity, concentration) when a validated quantitative method was not used, as long as the method(s) used is reliable for such estimation and it is clearly stated that the estimate is not the result of a validated quantitative method.
7. The examiner may report and/or state the limitations of his/her examinations and opinions.
8. The examiner may report and/or state general explosive science terms and principles.

5 Statements Not Approved For FBI Explosives Chemistry and Fire Debris Analysis Testimony and/or Laboratory Reports

1. The examiner may not state or imply that two chemicals, chemical mixtures, or chemical products originated from the same source to the absolute exclusion of all other sources.
2. In cases involving comparisons of items, an examiner generally may not report and/or state an opinion about the exact source of a chemical or material. However, there may be instances when this is acceptable (e.g., chemical 'tags' were incorporated in the sample(s), entire population of comparison item was tested).
3. An examiner may not report or testify to legal hazardous device determinations or to the potential resultant damage from explosives and/or hazardous devices.

6 Laboratory Report Reviews

The content of an explosives chemistry and/or fire debris *Laboratory Report* will be reviewed per the Explosives Quality Assurance Manual Procedures for Preparing Reports and Retaining Case Records and the Explosives Chemistry and Fire Debris Report Writing Guidelines standard operating procedures ensuring compliance with the approved statements in this document.

7 Testimony Reviews

Explosives chemistry and fire debris testimonies will be reviewed in accordance with the FBI *Laboratory Operations Manual (LOM) Practices for Testimony Related Activities*. The review will ensure compliance with the statements in this document.

8 References

ISO/IEC 17025 - General Requirements for the Competence of Testing and Calibration Laboratories, International Organization for Standardization, Geneva, Switzerland, 2017.

ISO/IEC 17025:2017 - Forensic Science Testing and Calibration Laboratories Accreditation Requirements (AR 3125), ANAB, Milwaukee, WI, April 29, 2019.

FBI Laboratory Quality Assurance Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

FBI Laboratory Operations Manual, Federal Bureau of Investigation, Laboratory Division, latest revision.

Procedures for Preparing Reports and Retaining Case Records, Federal Bureau of Investigation, Laboratory Division, Explosives Quality Assurance Manual, latest revision.

Explosives Chemistry and Fire Debris Report Writing Guidelines, Federal Bureau of Investigation, Laboratory Division, Explosives Standard Operating Procedures: Chemistry, latest revision.

Rev. #	Issue Date	History
2	10/02/17	Modified title. Administrative changes for grammar and clarity. Removed and/or modified references to the Explosives Unit. Deleted sections 3.3 and 3.4.
3	12/16/19	Updated SOP title in section 7. Updated references. Removed SAU Chief and QA from approval lines. Separated Explosives Chemistry and Fire Debris TL signatures.

Redacted - Signatures on File

Approval

Explosives Unit Chief

Date: 12/13/2019

TL Approval

Explosives Chemistry
Technical Leader

Date: 12/13/2019

Fire Debris Technical
Leader

Date: 12/13/2019