

## Range of Conclusion When Comparing Toolmarks

1. IDENTIFICATION - Agreement of a combination of individual characteristics and all discernable class characteristics where the extent of agreement exceeds that which can occur in the comparison of toolmarks made by different tools and is consistent with the agreement demonstrated by toolmarks known to have been produced by the same tool.

- Level 1) **is certain** (*Identification*) Unequivocal attribution (identification) of a particular object as the cause of a trace on the basis of matching criteria of an individualizing character. The quality and/or quantity of the characteristics of the objects examined are persuasive.

\*\* **Note:** This agreement should be documented such that any qualified toolmark examiner may reach the same conclusion from the documentation alone. (At a minimum, the documentation (photographs and description) should include; The comparison of exemplar to second exemplar. The comparison of questioned exhibit to exemplar. A thorough description of the dynamic event that result in production of exemplar and like assessment of how the questioned exhibit came to be. Demonstration of the relevant areas compared.) In short, an examiner's say-so is not good enough ... an identification must be documented and obvious. "Documented" generally means photographs with description. Line counting is not satisfactory documentation by itself, line counts do not reflect the character (uniqueness or individuality) of the toolmark's morphology.

2. INCONCLUSIVE - a.) Some agreement of individual characteristics and all discernable class characteristics, but insufficient for an identification.

- Level 2) **is highly probable** (*very likely*) The group characteristics match. In addition to this, some individualizing characteristics are present, which do not allow an identification beyond doubt, due to the fact that they are not sufficiently distinctive. The quality and/or quantity of the characteristics of the objects examined are limited.

- Level 3) **is probable** (*likely*) Apart from largely group specific characteristics, there are also individual characteristics that match, the quality and/or quantity of which is insufficient.

2. INCONCLUSIVE - b.) Agreement of all discernable class characteristics without agreement or disagreement of individual characteristics due to an absence, insufficiency, or lack of reproducibility.

- Level 4) **can neither be identified nor excluded** (*not possible to judge*) Apart from existing group specific characteristics, there are no discernible individualizing characteristics. As a result of changes to the exhibit(s) to be examined it is not possible to prove either identification or exclusion.

2. INCONCLUSIVE - c.) Agreement of all discernable class characteristics and disagreement of individual characteristics, but insufficient for an elimination.

- Level 5) **on the whole, not very probable** (*unlikely*) There are divergences between group specific and/or individualizing characteristics. An exclusion is not possible due to the insufficient quality and/or quantity of the characteristics of the objects examined.

3. ELIMINATION - Significant disagreement of discernable class characteristics and/or individual characteristics.

- Level 6) **can be excluded** (*Exclusion*) There is no doubt that the particulars of the objects examined do not match. Exclusion of a certain object on the basis of non-matching criteria of group specific and/or individualizing character.

4. UNSUITABLE - Unsuitable for microscopic examination.

**Note:**

1. IDENTIFICATION through 4. UNSUITABLE are from the ASSOCIATION OF FIREARM AND TOOLMARK EXAMINERS Criteria For Identification Committee report and adopted by the association in 1992.

Blue - Level 1) through - Level 6) are from the European Union Laboratories wording for similar findings.

**\*\* Note:** To report “**is highly probable** (*very likely*)” or “**is probable** (*likely*)” when the finding is inconclusive is to prejudice the Juror. Such wording for an inconclusive finding implies that “this is the tool” when the examiner cannot actually reach this conclusion. Such wording is not warranted, an inconclusive is **inconclusive!** - European wording ( *likely* or *very likely* ) for inconclusive findings is highly prejudicial. It is not white, it is not black, it is gray ... Gray is inconclusive, it is neither black nor white. The examiner needs to lead with the word “inconclusive” to reflect the true nature of the finding.

**\*\* Note:** are this authors opinion.

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