

	IMP-PM 12.6 Fluorescein	
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	<i>Revision #: 1</i>	<i>Issued Date: 04/09/2018</i>
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12.6 Fluorescein

12.6.1 Introduction

Bloody footwear and tire tread impressions can be enhanced for the purpose of aiding forensic examinations. This reagent is best used on multi-colored or dark horizontal surfaces where other reagents will not produce an enhanced impression with sufficient contrast.

This procedure requires the use of a positive blood control and negative control prior to application. It is recommended that the impression be photographed both before and after processing.

12.6.2 Formula

12.6.2.1 Fluorescein Stock Solution

- 1 gram Fluorescein powder
- 100 ml 10% Sodium Hydroxide solution
- 10 grams Zinc powder (preferably mossy)

In a 250 ml beaker on a hot plate with a magnetic stirring device, dissolve the Fluorescein in the Sodium Hydroxide solution with heat and gentle stirring. Add the Zinc powder and bring to boiling, stirring continuously. Boil until the solution loses most of its color. Cool and decant the liquid (Solution A) off of the Zinc powder.

12.6.2.2 10% Hydrogen Peroxide

- 100 ml 30% Hydrogen Peroxide
- 200 ml Distilled Water

In a 500 ml beaker with a magnetic stirring device, mix the Hydrogen Peroxide with the distilled water.

12.6.2.3 Fluorescein Working Solution

- 10 ml Fluorescein Stock Solution
- 190 ml Distilled Water

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12.6.3 Mixing

In a 250 ml beaker with a magnetic stirring device, mix 10 ml of Fluorescein Stock Solution with 190 ml of distilled water. This Working Solution should be mixed just prior to use. The Working Solution, followed by spraying with 10% hydrogen peroxide, will be tested on a positive control blood stain prior to use.

12.6.4 Application

The Fluorescein Working Solution should be applied by spraying the item to be enhanced, followed by spraying with the 10% Hydrogen Peroxide solution. This reagent does not have a fixative in it and the blood may run with excessive spraying. Allow to air dry.

12.6.5 Reaction

A positive reaction will produce a fluorescent impression that requires excitation with an alternate light source of approximately 445 nm and the use of orange goggles for visualization and an orange filter for photography.

12.6.6 Storage

The Fluorescein Working Solution must be mixed just prior to use.

12.6.7 References

Cheeseman, R., "Direct Sensitivity Comparison of the Fluorescein and Luminol Bloodstain Enhancement Technique", JFI, 49(3), 631-646, 1995.

Bodziak, W. J., Footwear Impression Evidence, 2nd ed.; CRC Press: Boca Raton, FL, 2000.

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