

# Processing Evidence Using Luminol

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# Processing Evidence Using Luminol

## 1 INTRODUCTION

This procedure is intended to be utilized by trained personnel to ensure consistency and transparency of methods employed during the enhancement of patterned impressions observed in blood located on evidence received in the Questioned Documents Unit (QDU).

## 2 SCOPE

These procedures apply to examiners and analysts in the QDU enhancing patterned impressions in blood utilizing Luminol.

## 3 EQUIPMENT

- Non-metallic spray bottle (200 mL – 8 oz) with a non-metallic spray apparatus
- Well ventilated darkened room
- Appropriate Personal Protective Equipment (e.g., gloves, lab coat, eyewear, mask)
- Luminol Kit- Bluestar Forensic
- Distilled water

## 4 STANDARDS AND CONTROLS

### 4.1 Luminol Solution

- A. In a non-metallic spray bottle (200 mL – 8 oz), add the contents of the Luminol Kit (two tablets) and 120 mL (4 oz) of distilled water.
- B. Stir gently to mix, allowing for about 1 or 2 minutes for complete dissolution and mixing of the chemicals.
  - Do not shake the bottle.
- C. The Luminol Solution will be tested in the dark on a positive control blood stain prior to use.
  - A positive reaction will produce a strong blue white luminescence.
- D. Record the results of the control test in the Chemical Enhancement and Control Logbook located in the Footwear/Tire Laboratory space.
- E. The Luminol Kit can be stored unmixed for up to 3 years.
- F. The Luminol Solution must be prepared fresh and used within 3 hours of mixing.

## 5 PROCEDURE

- A. The item to be enhanced should be spread on a piece of brown paper on the floor of the designated room. This room is a well-ventilated room which can be darkened.
- B. The Luminol Solution should be lightly sprayed as a fine mist on the item to be enhanced.
- C. When stains have been located, they should be outlined with an appropriate marker and numbered for photography.
- D. The located stains should be photographed by the Operational Projects Unit photographers.

- E. Luminol spraying must continue during photography to maintain sufficient luminescence.
- F. At the completion of chemical enhancement, refer to [IMPRS-300 Footwear and Tire Evidence Examinations](#).

**6 LIMITATIONS**

Luminol reacts with the hemoglobin derivatives found in blood and produces light in a process known as chemiluminescence. In order to view an enhanced impression exhibiting chemiluminescence, the luminol enhancement process must be carried out in total darkness.

**7 SAFETY**

Standard precautions should be followed for the handling of chemical and biological materials. Chemical and biological materials that are hazardous or potentially hazardous will be maintained and examined in specifically designated areas within QDU space. QDU personnel may refer to the [FBI Laboratory Safety Manual](#) for additional guidance.

All chemicals will be disposed of according to the Chemical Disposal Guidelines on file in the Footwear and Tire Laboratory space.

Safety information concerning each of the chemicals used in these procedures are available from the Material Safety Data Sheets (MSDS) on file in the Footwear and Tire Laboratory space.

**8 REVISION HISTORY**

Revision	Issued	Changes
02	01/14/2022	Document revised to address new technical procedure requirements.