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MC9.1

Forensic Bloodstain Detection Reagent

Bluestar Forensic is a latent blood reagent that has been designed for use in real crime investigations – indoors or outdoors, small or large areas, fresh, dried or dilute blood residues. It is based on Luminol.

Procedure

Measure 125mL of distilled water into a fine mist spray bottle then add a pair of reagent tablets, one white and one beige. Gently swirl the solution until the tablets have dissolved. Avoid vigorous shaking. Spray a light mist onto the surface you wish to investigate. An intense blue (430nm) luminescence occurs (visible in semi-darkness) when the solution comes into contact with blood residues. Very small quantities of blood will provoke a reaction, and the luminescence will generally last for several minutes. The solution can be re-applied several times to the same area.

For a greater volume, scale up by 125mL of water per pair of tablets.

Aim to use within 4-6 hours. After 8 hours, discard any unused solution and prepare a fresh batch.

One pair of tablets will provide enough solution (125mL) to examine a surface area of up to 25m².

How Does It Work?

In alkaline conditions, luminol reacts with hydrogen peroxide to produce an unstable intermediate that sheds its excess energy as light. This reaction is greatly accelerated in the presence of haem, an organic iron complex found in haemoglobin. Haem is such a stable and effective catalyst that even very dilute and aged blood residues can be detected.

Suggested Approach

Apply dilute animal blood (e.g. MED25.10 or from meat) to pieces of fabric, paper or an absorbent surface such as natural wood. Allow the blood to dry then lightly spray with the mixed reagent system in dim light. For best results, allow your eyes to become accustomed to the low light conditions in advance. Compare the results to similar stains made with food dyes.

This “training” version of Bluestar Forensic can degrade DNA in blood cells, and therefore is not suitable for use in cases where DNA analysis of blood residues is to be done.

Safety

The beige tablets contain sodium hydroxide. The white tablets contain hydrogen peroxide stabilized in urea. MSD Sheets are available from www.southernbiological.com or call (03) 9877-4597.

These reagents are safe to use when mixed together in solution. Normal chemical laboratory procedures apply. Crime scene investigators usually wear protective clothing when looking for blood residues to avoid contaminating the scene. Dispose of unused solution in a sink under running water.

False Positive Results

This reagent system will give a chemiluminescent result on mammalian blood regardless of whether it had a human or animal source. Residues of other materials such as some household bleaches and chemicals containing copper can also cause a chemiluminescent reaction, but experienced crime scene investigators can usually distinguish between such “false positive” results and real blood residues. They take into account factors such as spatter pattern and the intensity of the luminescence when making an assessment.

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