

## TECHNICAL INFORMATION

### Lumiscene Advanced Latent Blood Search Kit Catalog No. LSCENE01

#### INTRODUCTION

The Lumiscene Kit is designed to help visualize latent bloodstains based on a chemiluminescence reaction, one which produces light. When Lumiscene comes in contact with blood the peroxidase-like activity of the hemoglobin forms the basis of the production of visible light. Lumiscene has luminescence with a peak at 525nm, allowing it to be more easily seen than standard luminol, and with a much brighter reaction.

Lumiscene is used for blood search, not blood enhancement. Lumiscene is extremely sensitive, allowing even the most minute traces of blood remnants to be identified. Lumiscene must be used by trained personnel and only be applied by vaporization. We recommend to apply Lumiscene with the CSAIR Compressor.



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Hazards/Safety Info	<u>H M I S</u>		<b>Warning!</b> Oxidizer, Corrosive. Avoid eye and skin contact. Use in well-ventilated area or laboratory hood. For treatment due to contact, refer to the MSDS. <i>Go to <a href="http://www.sirchie.com/support">www.sirchie.com/support</a>.</i>  <b>Safety Requirements:</b> 1. Safety glasses, nitrile or latex gloves, and respirator mask (N95) are required. 2. If any chemical or liquid is splashed into the eye, wash it out with cold, running water and seek medical attention if soreness or other symptoms persist. 3. If any solid chemical comes in contact with the skin, brush it off while dry with a tissue or a cloth. Wash the area thoroughly under cold, running water. 4. If any liquid is spilled onto the skin, wash the area thoroughly under cold, running water.
	H	1	
	F	0	
	R	0	
	PP	E	
Contents	1- LSCENE01 Lumiscene Stock Solution, 16 oz., 500ml 1- LSCENE01A Packet of Activation Tablets, 2 ea. 1- Spray Head Attachment		

## Chemical Luminescence

**EXTREMELY SENSITIVE**—over 1:50,000 can be seen with the naked eye. When Lumiscene comes in contact with blood the unique formulation causes emission peaks around 525nm. This high emission increases the visibility of latent bloodstains over standard luminol solutions.

Activated Lumiscene contains an extreme low level of peroxide (0.12%), minimizing the risk of chemical damage to biological traces (DNA).

## PROCEDURE

**WARNING!** After mixing Lumiscene Stock Solution with the Activation Tablets, mixture becomes an irritant.

**STEP 1** Place the bottle of stock solution and activation tablets on a clean, stable surface.

**STEP 2** Remove the standard cap from the 16 oz. (500ml) bottle of stock solution and add the two activation tablets.

**STEP 3** Replace the standard cap with supplied Spray Head.

**STEP 4** Swirl container GENTLY for 1 minute. Let stand for 5 minutes.

**STEP 5** Repeat STEP 4 three (3) times and it is ready to use.

### Notations:

- Lumiscene is used as a search technique. It should be applied with a team of two persons, one spraying and one spotting and marking. When using lumiscene, the amount sprayed should be minimized to avoid flooding the area and destroying DNA or a possible pattern.*
- Spray the lumiscene over an area. If luminescence is seen, mark the area for later processing. Each area should be tested to confirm blood, and then swabbed for DNA. These samples should be taken according to departmental protocol.*
- Always photograph the area in normal light before applying Lumiscene. To capture Lumiscene after application and luminescence, adjust the aperture and ISO speed on the camera for low light, and use a long exposure with no flash. Results are best in a darkened room.*

### Results Expected (shown to the right)

A BLUE-WHITE luminescence will be visible in total darkness when reagent is applied.



## Possible Reasons for Poor or No Results

1. No luminescence is viewed.
  - 1.1. No blood present.
  - 1.2. Luminescence is weak and the area/room was not adequately darkened.
  - 1.3. Solution is not fresh and has passed its life of effectiveness (*solution life is 60-1 minutes after mixing*).
  - 1.4. Unmixed reagent has exceeded normal shelf-life of one year from date of purchase.
2. False positive—no blood can be confirmed.
  - 2.1. Sources of copper or iron may have catalyzed the reaction.
  - 2.2. Household chlorine bleach may have catalyzed the reaction.



## References

1. M/Sgt Hayden B. Baldwin, *Basic Equipment for Crime Scene Investigators* <<http://www.feinc.net/equipmt.htm>> December 13, 2010
2. Loci Forensic Products, *Lumiscene* <<http://www.lumiscene.com/index.html>>
3. Saferstein, Richard, Ph.D., *Criminalistics*, New Jersey: Prentice Hall; 2001

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