	<p align="center"><b><i>Latent Procedure</i></b></p> <p><b>Pitt County Sheriff's Office Forensics Services Unit</b>  <i>Issued by Technical Leader</i></p>	<p><b>Effective Date:</b> 2018/04/01</p>	<p><b>Ver:</b> <b>2</b></p>
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### **Technical Procedure for Sudan Black**

**1.0 Purpose** – This procedure outlines how to make Sudan Black and apply to items of evidence for developing greasy and/or sticky prints.

**2.0 Scope** – This procedure applies to non-porous items of evidence that contain impressions in grease that require enhancing.

**2.1** Sudan Black is used to enhance dried stain deposits or greasy impressions on non-porous items of evidence. Sudan Black is less sensitive than other dyes which may be used. It should be considered for use on items which may be contaminated with grease, foodstuffs or dried deposits of soft drinks. This process will stain the fatty components of sebaceous sweat producing a blue-black impression.

**3.0 Definitions** – N/A

**4.0 Equipment, Materials and Reagents** (Alternatively pre-mixed solutions may be purchased from a commercial Forensic Supplier)

#### **4.1 Equipment and Materials**

- Protective gloves and apron/coat
- Face shield visor and/or safety goggles
- Magnetic stirrer, magnetic follower and magnetic retriever
- Glass beakers
- Glass processing trays
- Fume hood

#### **4.2 Reagents**


- Sudan Black (15 g)
- Methanol (1000 mL)

### **5.0 Procedure**

#### **5.1 Preparation**

- 5.1.1** Place fifteen (15) grams of Sudan Black into a large glass beaker along with a magnetic stirrer.
- 5.1.2** Add one thousand (1000) ml of methanol to the beaker and stir until solution is thoroughly mixed.
- 5.1.3** Add five hundred (500) ml of distilled water with continuous stirring for 5 minutes.
- 5.1.4** Place solution in a dark, shatter proof container until needed.

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**Note:** Not all of the Sudan Black will dissolve. Some sediment may remain.

## **5.2 Processing**

**5.2.1** Examiner/technician shall produce a self-made test print to be processed concurrently with items of evidence to be processed (see section technical procedure for Ensuring Quality Control).

**5.2.2** Shake solution prior to application to ensure dye is evenly distributed throughout the solution.

### **5.2.3 Immersion Method**

**5.2.3.1** Place Sudan Black solution in a tray. Solution should be deep enough to allow for submersion of the item of evidence.

**5.2.3.2** Submerge item of evidence for two (2) minutes.

**5.2.3.3** Remove from tray and submerge in a tray of distilled water or rinse with running tap water to remove excess dye.

**5.2.3.4** Allow item to dry completely before proceeding (do not use heat to accelerate the drying process). Developed impressions will appear blue-black. The above steps may be repeated in order to improve the contrast of any developed impressions.

### **5.2.4 Spray Method**

**5.2.4.1** Spray item of evidence with the dye to cover the area of interest completely.

**5.2.4.2** Using a spray bottle, rinse off excess dye with distilled water.


**5.2.4.3** Allow item to dry completely before proceeding (do not use heat to accelerate the drying process). Developed impressions will appear blue-black. The above steps may be repeated in order to improve the contrast of any developed impressions.

## **5.3 Standards and Controls – N/A**

## **5.4 Calibration – N/A**

## **5.5 Sampling – N/A**

## **5.6 Calculations – N/A**

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## 5.7 Uncertainty of Measurement - N/A

## 6.0 Limitations –

- 6.1** This process shall not be used on dark or printed plastic surfaces. This may affect the contrast needed to view and photograph the developed impressions.

## 7.0 Safety – Always use a fume hood when mixing and/or processing evidence. Protective gloves, eye goggles and protective clothing shall be worn as the solution will stain clothing and skin.

## 8.0 References

Kent, T., ed. *Manual of Fingerprint Development Techniques: A Guide to the Selection and Use of Processing for the Development of Latent Fingerprints*. Police Scientific Development Branch, London (July 1992).

Lee, H.C. “Methods of Latent Print Development.” *Proceedings of the International Forensic Symposium on Latent Prints*. (July 1987): 15–24.

Lennard, C.J. and P.A. Margot. “Sequencing of Reagents for the Improved Visualization of Latent Fingerprints.” *Proceedings of the International Forensic Symposium on Latent Prints*. (July 1987): 141-142.

*Manual of Fingerprint Development Techniques: A Guide to the Selection and Use of Processes for the Development of Latent Fingerprints*. Scientific Research and Development Branch, London (1986).

Trozzi, T.A., R.L. Schwartz and M.L. Hollars. *Processing Guide for Developing Latent Prints*. (2000): 1-64.

US Department of Justice. *Chemical Formulas and Processing Guide for Developing Latent Prints*. FBI Laboratory Division, Latent Fingerprint Section (1994).

## 9.0 Records – N/A

## 10.0 Attachments – N/A



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### **REVISION HISTORY**

<b>CURRENT VERSION</b>	<b>EFFECTIVE DATE</b>	<b>SUMMARY OF CHANGES</b>
1	2016/07/01	Original Version
2	2018/04/01	Change limitations, revision history table, rev# to ver# issue date to effective date.

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