

Technical Procedure for Sudan Black

1.0 Purpose – This procedure is 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

4.1 Equipment and Materials

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

4.2 Reagents

- Sudan Black
- Methanol
- Purified water

5.0 Procedure

5.1 Preparation

5.1.1 Place 15 grams of Sudan Black into a large glass beaker along with a magnetic stir bar.

5.1.2 Add 1000 mL of methanol to the beaker and stir until solution is thoroughly mixed.

5.1.3 Add 500 mL of purified water with continuous stirring.

5.1.4 Place solution in a dark, shatter-proof container until needed.

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

5.2 Processing

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

5.2.2 Immersion Method

- 5.2.2.1** Place Sudan Black solution in a tray. Solution should be deep enough to allow for submersion of the item of evidence.
- 5.2.2.2** Submerge item of evidence for 2 minutes.
- 5.2.2.3** Remove from tray and submerge in a tray of purified water or rinse with running tap water to remove excess dye.
- 5.2.2.4** 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.

5.2.3 Spray Method

- 5.2.3.1** Spray item of evidence with the dye to cover the area of interest completely.
- 5.2.3.2** Using a spray bottle, rinse off excess dye with purified water.
- 5.2.3.3** 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.

Note: Solution may be reused if not visibly contaminated after processing.

5.3 Standards and Controls – Forensic Scientists shall produce a self-made test print to be processed concurrently with items of evidence.

5.4 Calibration – N/A

5.5 Sampling – N/A

5.6 Calculations – N/A

5.7 Uncertainty of Measurement - N/A

6.0 Limitations – Sudan Black reagent and solution may be kept indefinitely in a dark, shatter-proof container.

- 6.1** The solutions may be reused after use; however, they must be discarded if contamination occurs.
- 6.2** Sudan Black may be used on surfaces which are extremely contaminated with greasy deposits or soiled with heavy concentrations of dried fluids. 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.
- 6.3** All serological examinations shall be conducted prior to treatment with Sudan Black.
- 6.4** Larger amounts of Sudan Black may be mixed for application to large items or use at crime scenes.

7.0 Safety –There are no major safety concerns associated with the use of this technique. Methanol is flammable and can be harmful if inhaled or ingested. 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.

7.1 This technique may be used at crime scenes; however, use only in well-ventilated areas or use a fan to remove the fumes produced.

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

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document
10/31/2013	2	Added issuing authority to header
03/30/2017	3	Header Update – Removed Digital reference.
01/19/2018	4	Updated issuing authority in header 5.2.1 & 5.3 - Moved requirement for test print to “Standards and Controls.” Edit magnetic stirrer to stir bar throughout.
02/01/2019	5	Changed “distilled” to “purified” throughout document Changed number references to be numerals only instead of spelled out throughout document 4.2: Removed chemical amounts 6.3: Removed “or document” from types of examination conducted before Sudan Black