

Technical Procedure Sodium Hypochlorite

1.0 Purpose – This procedure is a porous development procedure.

2.0 Scope – This procedure is a step in the processing of porous evidence that may contain impressions that require developing/enhancing.

2.1 Sodium hypochlorite is used on brown or darker colored paper bags, and other colored papers, after the Physical Developer process to enhance developed impressions. This technique will darken the actual impression while lightening the background. This technique will remove unwanted ninhydrin stains which assists in the visual examination and photography of prints developed with Physical Developer.

3.0 Definitions – N/A

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- Beakers
- Glass processing tray
- Camera equipment
- Fume hood
- Rubber gloves and protective clothing
- Face shield visor and/or safety goggles

4.2 Reagents

- Sodium hypochlorite
- Purified water

5.0 Procedure

5.1 Mixing Procedure

5.1.1 Place 500 mL of sodium hypochlorite and 500 mL of purified water in a large beaker or large shatter-proof container.

5.1.2 Swirl container to mix thoroughly.

5.2 Application Procedure

5.2.1 Forensic Scientists shall produce a self-made test print to be processed concurrently with items of evidence (see Section Technical Procedure for Friction Ridge Analysis and Comparison).

5.2.2 The item of evidence shall be carefully examined after the Physical Developer process and photographed to preserve any developed impressions prior to the application of sodium hypochlorite.

5.2.3 Utilizing a fume hood and protective clothing, place the solution in a glass processing tray which allows for the complete submergence of the item of evidence.

5.2.4 Place the item of evidence in the solution for approximately 15 seconds and then remove.

5.2.5 The item shall immediately be placed in a second glass processing tray that contains only purified water. Completely submerge the item to provide a water rinse. The rinse process is extremely important as deterioration may occur if all of the sodium hypochlorite is not removed.

5.2.6 Remove item from the water and allow the item to dry prior to conducting a visual examination.

5.2.7 Preserve any developed impressions photographically (see photographic equipment procedures) or by the use of a high resolution scanner (see Section Image Processing Procedure).

5.3 Standards and Controls – N/A

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 – This process is only effective on brown or darker paper bags and other colored papers.

7.0 Safety –There are no major safety concerns associated with the use of this technique; however, the sodium hypochlorite will damage clothing and may irritate the eyes and skin. Protective clothing shall be worn.

8.0 References

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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).

Phillips, Clarence E., Douglass O. Cole and Gary W. Jones. "Physical Developer: A Practical and Productive Latent Print Developer." *Journal of Forensic Identification*. Vol. 40, 3: 135-147 (1990).

Wertheim, P. A. "Physical Developer Processing." *Minutiae*. Issue 50 (2007).

Wilson, J.D., et al. "Examination of the steps leading up to the Physical Developer Process for Developing Fingerprints." *Journal of Forensic Science*. Vol. 52, 2: 320-329 (March 2007).

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
04/07/2017	3	Header Update – Removed Digital reference. 5.2.1 – updated procedure reference.
02/01/2019	4	Corrected issuer in header Changed number references to be numerals only instead of spelled out throughout document Changed “distilled” to “purified” throughout document 2.1: included what items sodium hypochlorite is used on 4.1: corrected spelling error