Technical Procedure for Powder Processing

1.0 Purpose – This procedure outlines the procedure for the use of fingerprint powder.

2.0 Scope – This procedure applies to the proper method by which to use fingerprint powder on items of evidence.

2.1 Fingerprint powder is used on non-porous items of evidence to develop latent impressions, making them visible to the naked eye. This technique will enable the Forensic Scientist to lift, photograph or electronically capture the latent print for preservation and comparison purposes.

2.2 Various processing techniques may be used after an item has been processed with powders. It is generally recommended that cyanoacrylate ester technique be used prior to powdering any item of evidence.

3.0 Definitions – N/A

4.0 Equipment, Materials and Reagents

4.1 Equipment and Materials

- Commercially prepared fingerprint powder: black, specialized powders and Magna powder
- Brushes: camel hair (assorted sizes), Zephyr (fiberglass bristles Feather), and Magna wands (used with magnetic powders)
- Fingerprint lifting tape and tape dispenser: clear, frosted, and polyethylene

4.2 Reagents – N/A

5.0 Procedure

5.1 Choose the powder that provides the most contrast. Powder shall provide the most contrast when compared to the background surface. Black, white, silver/gray, bi-chromatic, fluorescent, and magnetic powders are all available for use. Additionally, depending upon the material of the item (metal, plastic, etc.), the magnetic properties of the powder shall be considered. Magnetic powder may be used on non-metal items.

5.2 Dip brush into the powder containing vessel. Ensure that the tips of the bristles make contact with the powder surface.

5.3 For non-magnetic powders, tap away excess powder from brush.

5.4 Lightly brush the powder over the surface of the item of evidence using only the tips of the brush. Carefully brush the entire surface of the item until ridge detail becomes visible. Some latent impressions are light in color and will not appear dark after powder is applied. Low levels of moisture in the latent print may account for this. An effective way to develop these types of impressions is to introduce moisture to the latent print. This may be accomplished by breathing most air onto the area containing the latent print. Allow the moisture to dry and reapply the powder (it is not necessary to allow the moisture to dry when using magnetic powders).

5.5 Once the latent impression has become visible, gently brush away any excess powder adhering to the impression. Impression shall then be preserved using photography, lifting techniques or electronic preservation methods.

5.6 Photography: It is important to photograph any developed impression prior to lifting attempts. This will assist the Forensic Scientist at a later time if the impression is damaged or destroyed by further processing. A variety of camera equipment is available to record the impressions (see Section photographic equipment procedures). Use a scale in all photographs.

5.7 Lifting: The impression may be lifted by applying the adhesive side of a commercially available lifting tape to the surface containing the latent print. The tape used must be large enough that one (1) piece covers the entire area to be lifted. A folded over flap of tape shall be used for a hand-hold.

5.7.1 Tape shall be removed from the roll in one motion in order to prevent streaks.

5.7.2 Apply tape evenly in order to prevent wrinkles and/or air bubbles. Firmly hold the folded-over end of the tape, slowly press the free end onto the surface to be lifted and smooth the length of tape over the surface.

5.7.3 Tape shall then be removed in one, smooth, continuous motion.

5.7.4 Place the tape on a sheet of white paper (or lift card which is of contrasting color) in the same manner as the tape was applied to the surface. When several prints are developed (side by side or grouped closely together), lift all on one (1) piece of tape. Wider tapes shall be used for multiple prints (or place two (2) or more strips of tape over the impression and lift together).

5.7.5 Label each lift with the appropriate case numbers, item number, date, Forensic Scientist initials, location the lift(s) originated and any other cross reference information necessary.

5.7.6 Electronically preserved impressions: Latent impressions may also be electronically recorded with a computerized system such as the Image Processing System (See Section Image Processing Procedure). This process is to be used with faint or difficult impressions on certain surfaces. This practice often will allow the Forensic Scientist to record impressions that may have been unrecoverable prior to the implementation of this technology.

5.8 Standards and Controls-N/A

5.9 Calibration – N/A

5.10 Sampling – N/A

5.11 Calculations - N/A

5.12 Uncertainty of Measurement - N/A

6.0 Limitations - N/A

7.0 Safety – Powdering should be done inside a fume hood or in a well ventilated area. Protective gloves, protective eyewear and a lab coat shall be worn.

8.0 References

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9.0 Records – N/A

10.0 Attachments – N/A

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