

What factors affect quality and detection of latent fingerprints?

Materials needed:

- Two pieces of plain white paper (any scrap paper will do)

1. Prepare your workspace.

- Work outside if at all possible. Fingerprint powder is messy.
- No matter where you work, spread out some newspaper or other disposable covering to protect the work surface against powder spills.

2. Wash your hands with soap and water.

3. Touch the paper with your index and middle fingers. Pay attention to where you touched the paper.

4. Follow the steps in the Developing the Print procedure.

5. Then follow the steps in the Lifting the Print procedure.

6. Place the card with the lifted print next to the print it came from.

- Is it difficult to see the detail in the original print once it has been lifted?
- Are the prints smeared or partials?

7. Wash your hands again, but this time, rub some lotion on your hands or make sure your fingertips are coated in skin oils.

- The side of your nose is a good place to pick up extra skin oil on your fingertips, if needed.

8. Touch the second piece of paper with your index and middle fingers. Pay attention to where you touched the paper.

9. Again, follow the steps in the Developing the Print procedure and the Lifting the Print procedure.

10. Observe the differences.

- Does the surface of your skin—washed vs. lotioned/oily—make a difference in the quality of the print?
- Was it easier to develop the washed prints or the lotioned/oily prints?
- Was either type of print easier to lift?

Procedure

Developing the Print

1. Before opening the vial, give it a quick shake. Use the powder in the lid to load the bristle tips of the brush.
 - Make sure the vial is tightly closed before shaking.
 - Using too much powder is the most common mistake, so exercise restraint. DO NOT dip the brush into the vial.
2. To reveal the latent print, gently spin the brush in your hand and use the lightest of pressure to apply the powder.
 - Brush in the direction of any ridges that begin to appear.
 - Stop brushing when you can see the ridges of the latent print.
 - Take care to limit the number of brush strokes since it can actually damage the print.

Preserving the Print

1. Gently blow away any excess powder.
2. Press the adhesive side of the tape over the latent print surface and rub it to make certain complete contact is made.
3. Carefully peel the tape from the latent surface.
4. Attach to the tape to the glossy side of a fingerprint card. Press carefully to remove bubbles.

Did You Know?

Fingerprints have been used in various ways through history.

- » Ancient Babylonians pressed fingerprints into clay to identify the author of cuneiform writings and to protect business transactions
- » In about 800 CE, the Chinese used inked fingerprints to identify their children and in business dealings.
- » Fingerprints weren't used to identify criminals until the mid-1850's.

Fingerprint powders can be defined as conventional (colorant and base), magnetic (colorant and iron shavings), and fluorescent (light stimulated colorant and base).

Fingerprint powder adheres to the moisture and oil particles in a latent print to make the print visible to the naked eye.

The friction ridge skin that everyone has on parts of their hands and feet is unique to them.

Although black powder continues to be the most popular, the convention today is to use a colored powder that can provide the greatest visual contrast to the surface.

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