

**CRM 341 ~ Lab Experiments 1 and 2:**  
**Use of Black and Fluorescent Powders to Recover Latent Fingerprints**

**Supplies from your CSI Kit:**

- Dual Powder
- Fiberglass Fingerprint Brush
- Black/Green Magnetic Fluorescent Powder
- Magnetic Powder Applicator
- Fingerprint Tape
- Fingerprint Backing Cards
- 7X Folding Magnifier
- Two Pairs of Nitrile Gloves
- Face Mask

**Supplies from home:**

- Coffee cup
- Two (2) Non-porous objects/surfaces (such as a lacquered table, tile, or glass mirror), one “dark” colored and one “light” colored
- Two (2) Porous objects/surfaces (such as a wood-grained table, paper from a notebook, or corkboard countertop), one “dark” colored and one “light” colored
- One (1) metal surface (such as an old metal pan or pot)
- One (1) non-porous surface (such as an old piece of paper)
- A camera (digital/one-time use) to take photos of your “lifts” ~ **you will be asked to upload those photos to include in your report or as attachments to your report.**

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**PLEASE READ THROUGH ALL THE DIRECTIONS PRIOR TO BEGINNING THE EXPERIMENTS**  
**~ FOR YOUR SAFETY AND TO PROTECT YOUR HOME**

**Instructions:**

- Put on a set of nitrile gloves and a face mask, as the material you will work with is superfine and can be inhaled into your nose and mouth. Also, you want to wear a set of gloves as the powder can be quite messy. Last but not least, before using the powders, **review the MSDS (Material Safety Data Sheet) for each product**
  - Make sure this experiment is completed in an area where you can get messy, as the powder may be difficult to clean up/get out of upholstery, etc.
  - You may want to place newspaper or old rags on the surface where you will work so that you don't make more of a mess than necessary.
- Place some of your powder into a clean coffee cup
- On the dark colored porous object/surface, you will leave some fingerprints behind
  - To do this, rub your fingers across your forehead to get a good deposit of natural oil. If you have dry skin, utilize an oil based hand cream that you rub on your hands and palms.
- Once you have a fair deposit of oil on your fingers, touch the dark surface you have selected, placing fingerprints on the surface
- Next, dip the tip of your brush into the black dual powder. Tap the brush lightly on the side of the coffee cup to remove excess residue.
- Now that you have the brush lightly powdered, gently move the tip of the brush over the dark surface on which you have deposited your latent fingerprints. Move in a circular motion around the surface. You should see the prints begin to show.

- Do not dust the prints too much, as they will fill up with powder and make a smudge instead of a print. Likewise, too much powder on your brush will “clog” the print by filling in the space between the ridges.
- Once you have developed the prints to where they are visible, take about a two-inch section of tape, lay it gently on top of the print, moving from one edge of the tape to the other so as not to smudge the print, and carefully rub the tape, sticky side down, onto your fingerprint. Move your finger in a circular motion over the tape applying gentle pressure until you feel that the print has stuck to the tape.
- Pull the tape up from one side and lift it off the surface. You should see the fingerprint on the tape. Take one of your fingerprint backing cards and adhere the tape to the card by attaching one side of the tape and smoothing the entire section of tape to your card.
- The fingerprint should contrast on the backing card and should be easily visible. Look at your fingerprint with your folding magnifier. Then examine your fingers with the magnifier and see if you can determine which of your fingers left the latent fingerprint that you have just recovered.
- Now, you are ready to send your recovered trace evidence (the fingerprint) to the Lab!!!
- Repeat the experiment utilizing the light colored porous object/surface, the dark colored non-porous object/surface, and the light colored non-porous object surface. You will lift latent fingerprints from each of the items and they will be placed on individual fingerprint backing cards.

- You will REPEAT the experiment (all the way through to the end, where you place the tape with the print on the backing card), only this time it will be on ONE type of surface.
- You will now use the BLACK/GREEN FLUORESCENT MAGNETIC POWDER, although you can continue to use the remainder of your fingerprint tape and backing card supplies.
  - The fluorescent magnetic powder is sometimes used on shiny or porous surfaces (such as glass or paper); however, using metal pans or items is not suggested.

Why does fingerprint powder develop latent fingerprints? Powder is an attraction process. The powder simply clings to the residue, primarily the moisture, left behind on the surface. However, you have to remember powder will cling to any residue left on the surface, such as water rings left on a table top, dried rain drops on a vehicle, or sweat marks left by a suspect (Brumfield and Johnson, 2004).

### Directions:

- Please attach a MS Word report (500-750 words) of your experiment to the designated Dropbox and to the designated discussion boards.
- You report should include documentation of how you used your **materials**, how you conducted the **experiment**, your **methods** to conduct the experiment, as well as describing your **findings** and experience, and providing a **conclusion** as to what you learned from the practical.
- You will also include in the lab report **several photos of the items processed, the equipment you used, and the results from your lifts**. You might have some difficulty photographing the backing cards with the lifts on them so you may need to watch your flash for glare on the tape.
- **Finally**, you will review other students’ postings and discuss with at least two (2) classmates how their experiences were either similar or dissimilar to yours. Did they do something different in their methodology?