Separation of Adhesive Tapes from Surfaces Using Three Different Techniques

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Abstract:

This study investigates the use of three techniques to separate adhesive tapes from various surfaces. The techniques employed included a freezing technique, heating with a steam iron, and the application of Un-du®. A fingerprint was added to the adhesive side of four different types of tape and then added to either paper, plastic, wood, or another adhesive surface. After a time period of 1, 2, 4, 6, or 8 weeks the tapes were removed using one of the three techniques. Latent prints were developed off the adhesive side of the tape using either Wet Wop or Sticky Side Powder. All three techniques were effective in separating tape from paper and wood surfaces at all time periods. However, none of the techniques used were able to separate tape from plastic and adhesive surfaces.

Introduction:

- Adhesive materials such as tape and stamps are common items submitted to labs for latent print development
- Adhesive surfaces offer a great challenge to examiners both in developing prints from the adhesive side and separating the tape from its surface
- Previous experiments have looked at separating adhesives using either a heating or freezing technique. Un-du® is a commercial product that has been shown to separate adhesives from various surfaces
- This project compares all three methods to determine which technique is most effective

Methods:

- Duct tape, packing tape, and Scotch tape cut into ~2 inch sections
- Single fingerprint added to the center of tape on the adhesive side
- Tape placed adhesive side down on one of the two surfaces used
- Tape was removed using one of the three separation techniques
- Latent prints developed using either Wet Wop or Sticky Side Powder

Results:

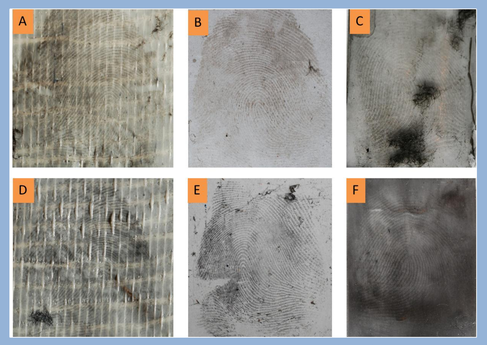

Figure 1: Adhesive tapes attached to paper surfaces and separated using a steam iron. (A-C) Duct tape, packing tape, and Scotch tape developed with Wet Wop. (D-F) Duct tape, packing tape, and Scotch tape developed with Sticky Side Powder.

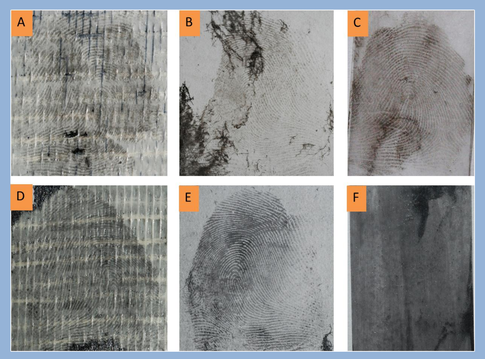

Figure 2: Adhesive tapes attached to paper surfaces and separated using a freezer. (A-C) Duct tape, packing tape, and Scotch tape developed with Wet Wop. (D-F) Duct tape, packing tape, and Scotch tape developed with Sticky Side Powder.

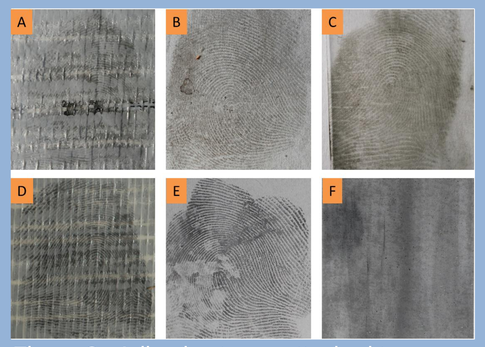

Figure 3: Adhesive tapes attached to paper surfaces and separated using Un-du®. (A-C) Duct tape, packing tape, and Scotch tape developed with Wet Wop. (D-F) Duct tape, packing tape, and Scotch tape developed with Sticky Side Powder.

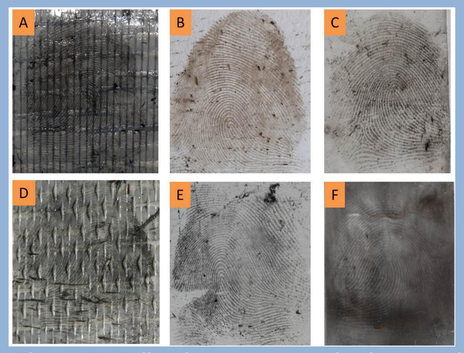

Figure 4: Adhesive tapes attached to wood surfaces and separated using a steam iron. (A-C) Duct tape, packing tape, and Scotch tape developed with Wet Wop. (D-F) Duct tape, packing tape, and Scotch tape developed with Sticky Side Powder.

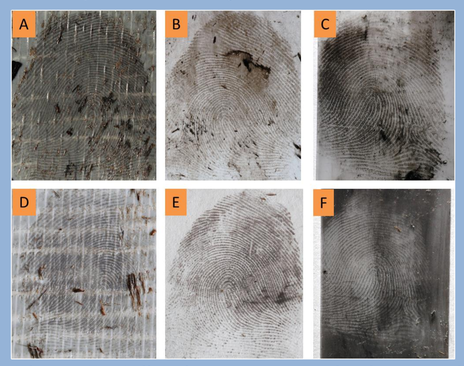

Figure 5: Adhesive tapes attached to wood surfaces and separated using a freezer. (A-C) Duct tape, packing tape, and Scotch tape developed with Wet Wop. (D-F) Duct tape, packing tape, and Scotch tape developed with Sticky Side Powder.

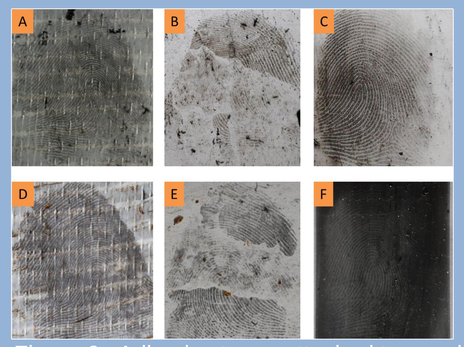

Figure 6: Adhesive tapes attached to wood surfaces and separated using Un-du®. (A-C) Duct tape, packing tape, and Scotch tape developed with Wet Wop. (D-F) Duct tape, packing tape, and Scotch tape developed with Sticky Side Powder.

Conclusions:

- All three techniques can be used to separate adhesive tapes
- Un-du® appeared to be the best separation technique for adhesives attached to a paper surface
- Both developers provided good latent print detail
- Wet Wop worked better than Sticky Side Powder on the Scotch tape

Future Studies:

- The use of different types of adhesive tape such as black electrical tape and brown packaging tape
- Different surfaces such as cardboard and brown paper bags
- Swabbing adhesive surfaces for potential touch DNA

References:

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Acknowledgements:

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