



FIN 10.20

Para-dimethylaminocinnamaldehyde (PDMAC)

- A. Purpose:** p-Dimethylaminocinnamaldehyde (pDMAC) is a fluorescing reagent that reacts with urea, amino acids and salts found in friction ridge detail residue.
- B. Scope:** pDMAC paper is paper that has been embedded with pDMAC reagent. It is designed to be used on porous items, primarily currency and thermal paper. Because of the high fluorescence, pDMAC paper may also be useful in processing items with colorful backgrounds. It is used in conjunction with an alternate light source for visualization and photography.
- C. Equipment**
1. Alternate light source
 2. Digital camera
 3. Camera filters
 4. Trays
 5. Measuring beakers
 6. Fuming chamber
 7. Fuming hood
 8. Plastic bags
 9. Copier paper
 10. Balance
 11. Stir bars
 12. Stir plate
 13. Dark storage bottles
- D. Chemicals, Reagents, Solvents, Standards**
1. Commercially purchased pDMAC paper
 2. p-Dimethylaminocinnamaldehyde powder
 3. Ethanol
 4. 5-sulfosalicylic acid
- E. Safety/PPE**
1. This procedure requires the forensic scientist to work with potentially hazardous chemicals. It is the responsibility of the forensic scientist to wear the proper PPE and follow common laboratory chemical handling procedures when using these chemicals. It is also the forensic scientist's

**FIN 10.20****Para-dimethylaminocinnamaldehyde (PDMAC)**

responsibility to be familiar with all associated Safety Data Sheets (SDS) prior to working with chemicals.

2. Appropriate filters must be utilized while using the alternate light source.

F. Procedure

1. Purchase commercially prepared pDMAC paper or prepare pDMAC paper.
2. For prepared method - Combine pDMAC and Acid stock solutions
3. Soak two sheets of plain copier paper in the working solution until they are saturated.
4. Remove papers from the solution and allow to air dry.
5. Place item between two sheets of pDMAC paper and then place in protective sleeves or between plastic.
6. Compress sheets within sleeve for approximately 30 minutes.
7. View item under an alternate light source at approximately 475-515 nm with yellow or orange filter.
8. Photograph friction ridge detail using an appropriate filter.

G. Quality Requirements

1. See Latent Print Processing Technical Procedure.

H. Interpretations/Opinions/Report Wording Guidelines

1. See Latent Print Processing Technical Procedure.

I. Limitations

1. pDMAC is not suitable for non porous items.
2. pDMAC papers can be reused multiple times without applying any additional chemical.

J. References

1. Brennan, J., Bramble, S., Crabtree, S., Wright, G.: "The Fuming Of Latent Fingerprints Using Dimethylaminocinnamaldehyde." Journal of Forensic Identification, 1995.
2. Ramocowski, R., "Fluorescence Visualization of Latent Fingerprints on Paper Using p-Dimethylaminocinnamaldehyde (PDMAC)", Proceedings of the International Symposium on Fingerprint Detection and Identifications, Ne'urim, Isreal, June 1995.
3. Lee, J.; Bleay, S.; Sears, V.; Mehmet, S.; Croxton, R. Evaluation of the Dimethylaminocinnamaldehyde Contact Transfer Process and its Application to Fingerprint Development on Thermal Papers, Journal of Forensic Identification 2009 vol. 59 (5), pages 545-

**FIN 10.20****Para-dimethylaminocinnamaldehyde (PDMAC)**

568.

4. A. Mattei, F. Cervelli, F. Zampa. Development Techniques on Thermal Paper. 96th International Association for Identification Ed. Conf. 2011.
5. Lee, Henry C. and Gaensslen, R.E. Advances in Fingerprint Technology, Third Edition. CRC Press LLC; 2001.
6. IV. Om Prakash Jasuja , Gagandeep Singh. Development of latent fingermarks on thermal paper: Preliminary investigation into use of iodine fuming. Forensic Science International 192 (2009) e11–e16.

L. Additional Factors

1. This procedure does not affect subsequent processing with DFO, Ninhydrin, or Physical Developer.
2. The item may be processed again to increase fluorescence.