

Drug Chemistry Section
Drug Chemistry Procedure Manual
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Modification of C-12
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Name of Procedure:

Thin-Layer Chromatography
p-DMAB Visualizing Reagent

Suggested Uses:

A visualizing reagent or detection reagent must be used in Thin-Layer Chromatography if the compound or compounds are not distinguishable by their own color. Suggested uses for the p-DMAB spray reagent are indole compounds, ergot alkaloids, and other organic compounds. Refer to page 132, **Clarke's Isolation and Identification of Drugs**, and pages 631-649, "Spot Tests: A Color Reference for Forensic Chemists", (see **Literature References**) for color formations of various drugs.

Apparatus Needed to Perform Procedure Including Preparation of Reagent:

Fume hood
Graduated cylinder
Eye protection
Balance
Laboratory coat
Gloves
Spray bottle
Air compressor
Funnel
Spatula
Bottles
Tygon or rubber tubing
p-DMAB (para-dimethylaminobenzaldehyde)
Ethanol
Methanol
Concentrated hydrochloric acid

Formula for Preparing Reagent:

1. Weigh out 1.0 gram of p-DMAB (para-dimethylaminobenzaldehyde).
2. Add 5 milliliters of concentrated hydrochloric acid to 95 milliliters of methanol or ethanol.
3. Add the 1.0 gram of p-DMAB to the alcohol-hydrochloric acid mixture.
4. Place this solution in the spray bottle.
5. Properly label spray reagent.

Note: If you make up a stock solution of this reagent, store it in the refrigerator and do not add the hydrochloric acid until you place it in the spray bottle.

Quality Control Check:

A quality control check of this reagent will be performed using a known standard of LSD and following the application procedure listed below.

Expiration Date of Chemical Reagent:

The p-DMAB spray reagent is stable and can be used until depletion.

Application of Procedure on Evidence:

1. Place well-dried TLC plate in hood.
2. Activate hood.
3. Using the air compressor and spray bottle, apply a fine mist of the visualizing reagent to the TLC plate.
4. Apply the visualizing reagent until the spot corresponding to the known standard appears.

Application of Procedure on Evidence (continued):

5. Compare the known standard and the compound in question for their size, shape, color and position on the TLC plate.
6. Record the results of your observation.

Safety Concerns:

Always wear eye protection, gloves, and a laboratory coat when preparing this reagent for use.

Eye protection and laboratory coat should be worn when visualizing the TLC plate.

Literature References:

Randerath, Kurt, **Thin Layer Chromatography**, New York, Academic Press, 1968.

Moffat, A.C., **Clarke's Isolation and Identification of Drugs**, 2nd Ed., The Pharmaceutical Press, 1986, pp. 132 & 166-177.

Johns, S.H., "Spot Tests: A Color Chart Reference for Forensic Chemists", **Journal of Forensic Science**, July, 1979, pp. 631-649.

Butler, William P., **Methods of Analysis**, IRS Publication #341, December 1966, p. 93.

This procedure has been used in the Drug Chemistry Section since 1971.