

DRUG CHEMISTRY SECTION TECHNICAL PROCEDURE MANUAL		
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Name of Procedure:

Preliminary Tests
Froehde's Reagent

Suggested Uses:

The Froehde's reagent consists of a solution of molybdic acid and concentrated sulfuric acid. Aromatic compounds that typically undergo oxidation/reduction/substitution reactions will react with this reagent to produce colored intermediates. Refer to pages 631-649, "Spot Tests: A Color Chart Reference for Forensic Chemists", (see **Literature References**) for color formations of various drugs.

Apparatus Needed to Perform Procedure Including Preparation of Reagent:

Fume hood
Gloves
Eye protection
Laboratory coat
Pipet with bulb
Graduated cylinder
50ml beaker
Glass stirring rod
Sulfuric acid (concentrated)
Molybdic acid
Funnel
Reagent bottle
Porcelain spot plate
Spatula
Hot plate

Formula for Preparing Reagent:

1. Measure out 10 milliliters of concentrated sulfuric acid and heat.
2. Dissolve 50 milligrams of molybdic acid (or sodium molybdate) in sulfuric acid with heating and stirring.

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Formula for Preparing Reagent (Continued):

3. When cooled, pour solution into a reagent bottle.
4. Properly label reagent bottle.

Quality Control:

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

Expiration Date of Chemical Reagent:

The Froehde's reagent should be prepared every 30 days.

Application of Procedure on Evidence:

1. Place 1-2 drops of the reagent into a clean well on a spot plate.
2. With a spatula, add approximately 0.1 milligram of the unknown powder/tablet to the reagent in the spot plate.
3. Observe color produced.
4. Record results.

Safety Concerns:

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

Eye protection and a laboratory coat should be worn when using this reagent for color tests.

Sulfuric acid is a strong oxidizing agent and corrosive.

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Literature References:

Butler, William P., **Methods of Analysis**, IRS Publication #341, 1966, p. 136.

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

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