

DRUG CHEMISTRY SECTION TECHNICAL PROCEDURE MANUAL		
Procedure D-22	Extraction and Separations Electrophilic Separation of Cocaine Base	
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Name of Procedure:

Extractions and Separations
Electrophilic Separation of Cocaine Base

Suggested Uses:

This procedure is used to remove lidocaine base from cocaine base. Additionally this procedure removes nicotinamide, procaine, caffeine, stearic acid, sodium bicarbonate, sodium borate, carbohydrates, and ■field test blue■.

Apparatus Needed to Perform Procedure Including Preparation of Reagent:

Fume hood
Eye protection
Gloves
Laboratory coat
Hexane
Test tube
Pipets, glass, disposable
Pipet bulb
Vortex mixer
Small beaker
Heat source
50mL beaker
Glass stirring rod
Sulfuric acid (concentrated)
Trioxane (trioxymethylene)
Funnel
Reagent bottle
Spatula
Water
Sodium hydroxide
pH paper

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Formula for Preparing Reagent:

Marquis Reagent

Note: This is the same reagent as used in Procedure A-1 for Marquis Color Test.

1. Place 10 milliliters of concentrated sulfuric acid in beaker.
2. Add 8-10 drops of formaldehyde solution (40%) and stir.
3. Pour solution into reagent bottle.
4. Properly label reagent bottle.

Alternate Method

1. Pour 15-20 milliliters of concentrated sulfuric acid into a reagent bottle.
2. Add 0.2-0.3 gram of trioxane (trioxymethylene) and stir until completely dissolved.
3. Properly label reagent bottle.

20% Sodium Hydroxide Reagent

1. Weigh out 20 grams of sodium hydroxide.
2. Dissolve in 100 milliliters of water.
3. Pour into reagent bottle.
4. Properly label reagent bottle.

Quality Control Check:

A quality control check of the Marquis reagent will be performed using a known standard of heroin and following procedure A-1.

Expiration Date of Chemical Reagent:

The Marquis reagent should be prepared every 30 days.

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Application of Procedure on Evidence:

1. Crush 0.2 - 0.3 gram of sample and place in test tube.
2. Add 3 milliliters of hexane to tube and vortex 30 seconds.
3. Add 5 drops of Marquis reagent and vortex 1 minute.
4. Add 20% sodium hydroxide reagent with mixing until mixture is basic to pH paper.
5. Squirt approximately 10 milliliters of deionized water through mixture.
6. Allow layers to separate.
7. Remove hexane layer.
8. Evaporate hexane over moderate heat to obtain cocaine base.

Safety Concerns:

Keep top of test tubes pointed away from face or covered while vortexing to avoid splashing in eyes or face. Sulfuric acid and sodium hydroxide are caustic and can cause chemical burns.

Literature References:

Kerr, K., ■A Simple Procedure for Separating Cocaine Base from Procaine Base■, **Microgram**, Vol. XXIII, No. 5, May 1990, pp. 93-94.

Moffat, A. C., ed., **Clarke's Isolation and Identification of Drugs**, 2nd Ed., Pharmaceutical Press, London, 1986, p. 139-140.

Gould, E. S., **Mechanism and Structure in Organic Chemistry**, Holt, Rinehart, and Winston, Inc., 1959, 428-436.