

Drug Chemistry Section
Drug Chemistry Procedure Manual
Effective Date: September 1, 1997

NEW PROCEDURE
Prepared By: W. L. Cook
Approved By: I. L. Allcox
Supersedes:

Name of Procedure:

Extractions and Separations
Separation of Cocaine from Procaine, Benzocaine, Dimethylterephthalate,
and Nicotinamide.

Suggested Uses:

This procedure separates cocaine from some diluents including, but not limited to:
procaine, benzocaine, dimethylterephthalate, and nicotinamide.

Apparatus Needed to Perform Procedure Including Preparation of Reagent:

Fume hood
Gloves
Eye protection
Laboratory coat
Acetone
Ethyl ether
Sodium bicarbonate
(+) Di-*p*-toluoyl-D-tartaric acid, anhydrous (TLTA)
pH Test paper
Reagent bottles
Spatula, small
Filter paper
Test tubes, medium
Beakers, small

Formula for Preparing Reagent:

50 mg/mL TLTA Reagent

1. Dissolve 1.0 gram TLTA in 20 milliliters of acetone in a small reagent bottle.
2. Properly label the reagent bottle.

Expiration Date of Reagent:

The 50 mg/mL TLTA reagent can be used until depleted provided it is stored in an airtight bottle.

Application of Procedure on Evidence:

1. Dissolve 10-20 milligrams of a cocaine base sample in 2 milliliters of acetone in a test tube, or make cocaine HCl basic with sodium bicarbonate paste and add acetone.
2. Filter the mixture through fluted filter paper and catch filtrate in a clean test tube.
3. Add 10-12 drops of TLTA Reagent to the filtrate and invert the test tube to mix.
4. If a precipitate does not form, go to step 6.
5. If a precipitate does form, allow the mixture to sit for several minutes. Then repeat steps 2 & 3 until no precipitate forms when the TLTA reagent is added to the filtrate.
6. Crystallize the cocaine TLTA by scratching the inside of the test tube.
7. Allow the mixture to sit for several minutes. Filter the mixture through fluted filter paper, wash the cocaine TLTA with small portions of acetone and discard the acetone.
8. Convert the cocaine TLTA to cocaine base using a sodium bicarbonate solution, and extract the cocaine base with ethyl ether. Evaporate the ether to obtain cocaine base.

Safety Concerns:

Acetone and ethyl ether are extremely flammable.

Literature References:

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Additional Literature References:

The below listed references were referred to by Edwina Ard in her paper "Clean-up of Contaminated 'Crack' Procedure". These references are listed for information purposes:

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Saloom, Joseph M., "Separation of Cocaine from Impure 'Crack'," **Microgram**, Vol. XXII, No. 2 (February 1989), pp. 22-30.

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Sorgen, Gary J. and Heagy, James A., "Extraction of Cocaine from Currency", **Microgram**, Vol. XVI, No. 8 (August 1983), pp. 132-133.