

Drug Chemistry Section
Drug Chemistry Procedure Manual
Effective Date: September 1, 1996

Name of Procedure:

Extractions and Separations
Separation of Cocaine Base and Benzocaine Base

Suggested Uses:

This procedure is used to separate cocaine base and benzocaine base.

Apparatus Needed to Perform Procedure Including Preparation of Reagent:

Fume hood
Gloves
Eye protection
Laboratory coat
Hydrochloric Acid Solution (0.05N)
Ethyl Ether
Concentrated Sodium Hydroxide
Test tube
Pipets, glass, disposable
Pipet bulb
Small beaker
pH Test paper
Sodium Sulfate, anhydrous
Filter paper
Heat source

Formula for Preparing Reagent:

0.05N Hydrochloric Acid Reagent

1. Measure out 1 milliliter of concentrated hydrochloric acid.
2. Add the hydrochloric acid to 250 milliliters of water.
3. Place the solution in a reagent bottle.
4. Properly label reagent bottle.

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Application of Procedure on Evidence:

1. Crush 20-50 milligrams of sample and place in test tube.
2. Add approximately 2-3 milliliters of hydrochloric acid solution.
3. Vortex approximately 30 seconds and quickly remove liquid to second test tube.
[Do not allow sample to remain in acid for extended period of time.]
4. Extract aqueous layer several times with ethyl ether and discard.
[If infrared of benzocaine is desired, evaporate ethyl ether.]
5. Make aqueous layer basic with sodium hydroxide. Check with test paper for pH10.
6. Extract with ethyl ether and dry through sodium sulfate in filter paper.
7. Evaporate ethyl ether over moderate heat to obtain cocaine base.

Safety Concerns:

Ethyl ether is extremely flammable. Hydrochloric acid is corrosive. Sodium hydroxide is caustic.

Literature References:

Analytical Profiles of Cocaine, Local Anesthetics and Common Diluents Found With Cocaine, CND Analytical, Inc. 1990, p.11.