

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

Name of Procedure:

Extractions and Separations
Separation of Organic Acids and Bases by Solvent Wash

Suggested Uses:

Organic acids and bases are commonly encountered in mixtures with sugars (mannitol, inositol) or other common diluents. The differences in solubility between the organic acids and bases and these diluent materials can be used to separate the organic components for infrared analysis.

Apparatus Needed to Perform Procedure Including Preparation of Reagents:

Fume hood
Eye protection
Gloves
Laboratory coat
Small beaker
Filter paper
Chloroform
Ethyl Ether
Hexane
Methylene Chloride
Acetone
Spatula, small
Heat source

Application of Procedure on Evidence:

1. Place 10-30 milligrams of sample in filter paper over small beaker.
2. Wash sample with several small portions of suitable solvent.
3. Evaporate solvent over heat source in a fume hood to yield compounds.

Safety Concerns:

Ethyl ether, hexane and acetone are extremely flammable. Chloroform and methylene chloride should be used in a well ventilated area or in a fume hood.

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Other:

This procedure can also be used to remove controlled substances from commercial preparations.

Examples: Diazepam can be removed from tablets with an acetone or ethyl ether wash of the crushed tablet and methylphenidate can be removed using chloroform.

Literature References:

Forensic and Analytical Chemistry of Clandestine Phenethylamines, CND Analytical, Inc., 1994, pp. 6-7.

Moffat, A. C. Ed., **Clarke's Isolation and Identification of Drugs**, 2nd Ed., The Pharmaceutical Press, London 1986.