

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

**Name of Procedure:**

Extractions and Separations  
Dry Solvent Extraction of Drugs Utilizing Hexane/Ammonia.

**Suggested Uses:**

This procedure uses a dry extraction of hexane saturated with ammonia to remove phentermine, propoxyphene, codeine, diethylpropion, diazepam, clorpheniramine, amphetamine, ephedrine, phenylpropanolamine, 3,4-methylenedioxyamphetamine and analogs, methamphetamine, clortermine, and meperidine and from pharmaceutical preparations and clandestine mixtures. This procedure also works well in separating organic bases from mixtures containing acetaminophen and nicotinamide.

**Apparatus Needed to Perform Procedure Including Preparation of Reagent:**

Fume hood  
Gloves  
Eye protection  
Laboratory coat  
Ammonium Hydroxide  
Hexane  
Small beaker  
Filter paper  
Pipets, glass, disposable  
Pipet bulb  
Heat source  
Reagent bottle

**Formula for Preparing Reagent:**

1. Place one part ammonium hydroxide and ten parts hexane in a reagent bottle and shake.
2. Allow the layers to separate.
3. Properly label bottle.

**Expiration Date of Reagent:**

Reagent may be used until depleted if properly stored in an airtight reagent bottle.

**Application of Procedure on Evidence:**

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1. Place 20-50 milligrams of sample in filter paper over a small beaker.
2. Wash sample with ethyl ether and discard washings.
3. Dry sample and then wash with several small portions of hexane/ammonia reagent.
4. Evaporate solvent over moderate heat in a fume hood.

**Safety Concerns:**

Ammonia is a strong base and is caustic. Ammonia and hexane should be used in a well-ventilated area or under a fume hood.

**Literature References:**

Adair, A., Noggle, F. Jr., Odom, M., Rhodes, M., "The ANOR (Alternate Non-aqueous Organic Ratio Extraction Procedure)", **MICROGRAM**, Vol. XVI., No. 1, Jan. 1983, pp. 220-224.