

**Name of Procedure:**

Determination of Alcohol Concentration in Liquor Samples

**Suggested Uses:**

This procedure can be used for the determination of alcohol concentration (percent-by-volume) in samples containing alcohol concentrations between one and one hundred percent.

**Items Needed to Perform Procedure:**

Volumetric flask, 10 mL  
Deionized water  
100  $\mu$ L pipet  
Procedure used for Blood Alcohol Concentration (BAC) determination

**Reagent Preparation Procedure:**

Follow procedure used for BAC determination

**Procedure:**

1. Add 0.100 mL of sample to the volumetric flask.
2. Bring diluted sample to 10 mL. Mix.
3. Analyze diluted sample via the current BAC procedure, J-2.
4. Multiply the ethanol's grams-per-100 mL results by 1260 to obtain the original sample's ethanol concentration as percent-by-volume
  - a. Explanation: Multiply by 100 to compensate for the dilution in step 1. Then multiply by 10 to compensate for the dilution with n-propanol internal standard solution. Then divide by 0.789 (density of ethanol) to convert from gm/mL to mL/mL.

**Safety Concerns:**

Solutions containing a high concentration of alcohol are flammable.

**Drug Chemistry Section**  
**Drug Chemistry Procedure Manual**  
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**Modification of J-11**  
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**Literature Reference:**

1. Moffat, Jackson, Moss and Widdop, "Clarke's Isolation and Identification of Drugs", 2nd edition, Volume 1, 1986.