Overview

Useful For
Detection of ethanol (ethyl alcohol) in blood to document prior consumption or administration of ethanol
Quantification of the concentration of ethanol in blood correlates directly with degree of intoxication

Method Name
Headspace Gas Chromatography-Flame Ionization Detector (HSGC-FID)

NY State Available
Yes

Specimen

Specimen Type
Whole Blood NaFl-KOx

Advisory Information
This test is not performed using chain of custody. For chain of custody testing order COCH / Chain-of-Custody Processing.

Specimen Required

Container/Tube:
Preferred: Grey top (potassium oxalate/sodium fluoride)
Acceptable: Any anticoagulant

Specimen Volume: 2 mL

Collection Instructions: Specimen must be sent in original tube.

Forms
If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

Specimen Minimum Volume
0.5 mL or amount to fill 1 tube

Reject Due To

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>Reject</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>OK</td>
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</tbody>
</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Blood NaFl-KOx</td>
<td>Refrigerated (preferred)</td>
<td>72 hours</td>
<td></td>
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Test Definition: ALC
Ethanol, B

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Frozen</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>24 hours</td>
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**Clinical and Interpretive**

**Clinical Information**
Ethanol is the single most important substance of abuse in the United States. It is the active agent in beer, wine, vodka, whiskey, rum, and other liquors.

Ethanol acts on cerebral functions as a depressant similar to general anesthetics. This depression causes most of the typical symptoms such as impaired thought, clouded judgment, and changed behavior. As the level of alcohol increases, the degree of impairment becomes progressively increased.

In most jurisdictions in the United States, the level of prima facie evidence of being under the influence of alcohol for purposes of driving a motor vehicle is 80 mg/dL.

**Reference Values**
Not detected (Positive results are quantified.)

Limit of detection: 10 mg/dL (0.01 g/dL)

Legal limit of intoxication is 80 mg/dL (0.08 g/dL).

Toxic concentration is dependent upon individual usage history.

Potentially lethal concentration: > or =400 mg/dL (0.4 g/dL)

**Interpretation**
The presence of ethanol in blood at concentrations above 30 mg/dL (>0.03% or g/dL) is generally accepted as a strong indicator of the use of an alcohol-containing beverage.

Blood ethanol levels above 50 mg/dL (>0.05%) are frequently associated with a state of increased euphoria.

Blood ethanol level above 80 mg/dL (>0.08%) exceeds Minnesota’s legal limit for driving a motor vehicle. These levels are frequently associated with loss of manual dexterity and with sedation.

A blood alcohol level of 400 mg/dL (> or =0.4%) or higher may be lethal as normal respiration may be depressed below the level necessary to maintain life.

The blood ethanol level is also useful in diagnosis of alcoholism. A patient who chronically consumes ethanol will develop a tolerance to the drug, and requires higher levels than described above to achieve various states of intoxication. An individual who can function in a relatively normal manner with a blood ethanol level above 150 mg/dL (>0.15%) is highly likely to have developed a tolerance to the drug achieved by high levels of chronic intake.

**Cautions**
Not intended for use in employment-related testing.
Whole blood is required (not serum or plasma).

**Clinical Reference**

**Method Description**
Specimens are analyzed and quantitated using headspace gas chromatography-flame ionization detection. (Sunshine I: Methodology for Analytical Toxicology. Cleveland, OH, CRC Press, 1975, p 145)

**PDF Report**
No

**Day(s) and Time(s) Test Performed**
Monday through Sunday; Varies

**Analytic Time**
Same day/1 day

**Maximum Laboratory Time**
1 day

**Specimen Retention Time**
2 weeks

**Performing Laboratory Location**
Rochester

**Fees and Codes**

**Fees**
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact Customer Service.

**Test Classification**
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

**CPT Code Information**
80320
G0480 (if appropriate)

**LOINC® Information**
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<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>ALC</td>
<td>Ethanol, B</td>
<td>56478-1</td>
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<table>
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