

## 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 NaFI-KOx

### Ordering Guidance

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

Gross lipemia	Reject
Gross icterus	OK

### Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood NaFl-KOx	Refrigerated (preferred)		
	Frozen	14 days	
	Ambient		

## Clinical & 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.**

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Whole blood is required (not serum or plasma).

**Clinical Reference**

Porter WF, Moyer TP: Clinical toxicology. In Tietz Textbook of Clinical Chemistry. Fourth edition. Edited by CA Burtis, ER Ashwood. Philadelphia, WB Saunders Company, 1993, pp 1155-1235

**Performance****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) Performed**

Monday through Friday

**Report Available**

2 to 3 days

**Specimen Retention Time**

2 weeks

**Performing Laboratory Location**

Rochester

**Fees & 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 US Food and Drug Administration.

**CPT Code Information**

80320

G0480 (if appropriate)

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**LOINC® Information**

Test ID	Test Order Name	Order LOINC® Value
ALC	Ethanol, B	56478-1

Result ID	Test Result Name	Result LOINC® Value
30908	Ethanol, B	56478-1