Overview

Useful For
Detection and quantitation of acetone, methanol, isopropanol, and ethanol in whole blood
Quantification of the concentration of ethanol in blood that correlates with the degree of intoxication
Evaluation of toxicity to the measured volatile substances

Testing Algorithm
Includes methanol, ethanol, isopropanol, and acetone.

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

NY State Available
Yes

Specimen

Specimen Type
Whole blood

Advisory Information
This test is not performed using chain of custody. For chain of custody testing order VLTBX / Volatile Screen, Chain of Custody, Blood.

Additional Testing Requirements
Ethylene glycol requires a separate request. See ETGL / Ethylene Glycol, Serum.

Specimen Required

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

Specimen Volume: 1 mL

Collection Instructions: Do not use alcohol to clean arm. Use alternatives such as Betadine to cleanse arm before collecting any specimen for volatile testing.

Specimen Minimum Volume
0.5 mL or amount to fill 1 tube

Reject Due To

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Gross hemolysis</td>
<td>OK</td>
</tr>
<tr>
<td>Gross lipemia</td>
<td>Reject</td>
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</tbody>
</table>

Document generated April 7, 2020 at 6:10pm CDT
Gross icterus | OK

### Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Whole blood</td>
<td>Refrigerated (preferred)</td>
<td>72 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>24 hours</td>
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### Clinical and Interpretive

#### Clinical Information

Volatile substances in the blood include ethanol, methanol, isopropanol, and acetone. Acetone is generally elevated in metabolic conditions such as diabetic ketoacidosis. Methanol and isopropanol are highly toxic and result from exogenous ingestion.

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 function 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 progressively increases.

In most jurisdictions in the United States, the per se blood level for being under the influence of alcohol (ethanol) for purposes of driving a motor vehicle is 80 mg/dL.

#### Reference Values

**METHANOL**

Not detected (Positive results are quantitated.)

Toxic concentration: $>\text{ or } =10\text{ mg/dL}$

**ETHANOL**

Not detected (Positive results are quantitated.)

Toxic concentration: $>\text{ or } =400\text{ mg/dL}$

**ISOPROPA NOL**

Not detected (Positive results are quantitated.)

Toxic concentration: $>\text{ or } =10\text{ mg/dL}$

**ACETONE**

Not detected (Positive results are quantitated.)
Toxic concentration: > or =10 mg/dL

**Interpretation**

**Methanol:**

The presence of methanol indicates exposure which may result in intoxication, central nervous system (CNS) depression, and metabolic acidosis. Ingestion of methanol can be fatal if patients do not receive immediate medical treatment.

**Ethanol:**

The presence of ethanol indicates exposure which may result in intoxication, CNS depression, and metabolic acidosis.

**Isopropanol:**

The presence of isopropanol indicates exposure which may result in intoxication and CNS depression. Ingestion of isopropanol can be fatal if patients do not receive immediate medical treatment.

**Acetone:**

The presence of acetone may indicate exposure to acetone; it is also a metabolite of isopropanol and may be detected during ketoacidosis.

**Cautions**

This test does not detect ethylene glycol.

**Not intended for use in employment-related testing.**

**Clinical Reference**


**Performance**

**Method Description**

Specimens are analyzed and quantitated by headspace gas chromatography-flame ionization detection. (Methodology for Analytical Toxicology. Edited by I Sunshine. Cleveland, OH, CRC Press Inc., 1975, p 145)

**PDF Report**

No

**Day(s) and Time(s) Test Performed**
Test Definition: VLTB
Volatile Scrn, B

Monday through Sunday; Varies

**Analytic Time**
Same day/1 day

**Maximum Laboratory Time**
1 day

**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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<th>Order LOINC Value</th>
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<tbody>
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<td>Volatile Scrn, B</td>
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