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

This test is not intended for use in employment-related testing.

Testing Algorithm
This test includes analysis of 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

| Gross hemolysis | OK |

Document generated September 25, 2020 at 4:30am CDT
Test Definition: VL TB
Volatile Scrn, B

<table>
<thead>
<tr>
<th>Gross lipemia</th>
<th>Reject</th>
</tr>
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<tbody>
<tr>
<td>Gross icterus</td>
<td>OK</td>
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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>14 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
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<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: > or =10 mg/dL

ETHANOL
Not detected (Positive results are quantitated.)
Toxic concentration: > or =400 mg/dL

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

**Clinical Reference**


**Performance**

**Method Description**

Specimens are analyzed and quantified by headspace gas chromatography- flame ionization detection.(Baselt RC. Disposition of Toxic Drugs and Chemicals in Man, 10th edition, Biomedical Publications; 2014. pp 2211)

**PDF Report**

No

**Day(s) and Time(s) Test Performed**

Monday through Sunday; Varies
Test Definition: VLTB
Volatile Scrn, B

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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<td>Volatile Scrn, B</td>
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<table>
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