# Physical Evidence Bulletin

## Blood Alcohol

**Uniform Standards For Withdrawal, Handling, and Preservation of Blood Samples for Forensic Alcohol Analysis**

### Purpose

The Physical Evidence Bulletin (PEB) is a guideline intended for law enforcement agencies to follow in order to properly submit evidence to BFS Laboratories. PEBs are not intended to be used in lieu of training in the collection of evidence.

### Analysis and results that may be obtained

The Bureau of Forensic Services (BFS) provides analytical support to law enforcement agencies through the identification and quantitation of the amount of ethanol in biological samples. Samples that contain less than 0.09% alcohol may be sent to the BFS Toxicology Laboratory for drug testing.

### Overview

In accordance with Vehicle Code Section 23158, the California Department of Highway Patrol, in cooperation with the Department of Public Health and the Department of Justice, has adopted uniform standards for withdrawal, handling and preservation of blood samples for forensic alcohol analysis. The standards are outlined in this document.

### Collection, Handling and Preservation of Blood Samples

Blood samples obtained from persons involved in traffic accidents or traffic violations shall be collected, handled and preserved as required by Section 1219 and 1219.1 of Title 17 of the California Code of Regulations.

- Blood samples are collected by venipuncture from living individuals as soon as feasible after the alleged offense and only by persons authorized by Section 23158 of the California Vehicle Code (licensed physician and surgeon, registered nurse, licensed vocational nurse, duly licensed clinical laboratory scientist or clinical laboratory bioanalyst, a person who has been issued a "certified phlebotomy technician" certificate pursuant to Section 1246 of the Business and Professions Code, unlicensed laboratory personnel regulated pursuant to Sections 1242, 1242.5, and 1246 of the Business and Professions Code, or certified paramedic acting at the request of a peace officer. A certified paramedic shall not withdraw blood for this purpose unless authorized by his or her employer to do so.

- Alcohol or other volatile organic disinfectants are **NOT USED** to clean the skin where specimen is to be collected. Only aqueous benzalkonium chloride ("Zephiran"), povidone-iodine ("Betadine") or other approved aqueous disinfectants are used to disinfect the skin before venipuncture. (Merthiolate and mercuric chloride are not used per
a May 24, 2002 Department of Public Health Advisory because mercury containing compounds are now known to cause cancer or reproductive toxicity.)

- Sterile dry hypodermic needles and syringes or clean dry vacuum-type containers with sterile needles are used. No reusable equipment is used. The blood sample drawn is deposited into a clean, dry container (commercially prepared blood collection tube) which is closed with an inert stopper. Sample containers are not reused. Tubes for collecting blood contain an anticoagulant (such as potassium oxalate) and a preservative (such as sodium fluoride).

- The blood collection kits contain two blood tubes. To ensure an adequate amount of blood sample for alcohol and toxicology (drugs) analyses, please confirm that both blood tubes are used in the collection and are filled completely. The collection tube should be mixed after collection by gently inverting at least eight times.

- The MINIMUM quantity of blood required to perform duplicate determinations by the laboratory and still provide sufficient quantity for referee analysis by the defendant is 3 mL (approximately one teaspoon). The blood collection tubes on which DOJ laboratories performed quality assurance and non-interference testing is:
  - VACUTAINER® Grey Stopper 10 mL, containing potassium oxalate, 20 mg and sodium fluoride, 100 mg.

**Note:** DOJ personnel can provide corroborative testimony as to the contents and non-interference of the listed container. Samples received in other containers may be analyzed but may be subject to a legal challenge.

### Marking and packaging of blood tubes

Maintenance of identity and integrity of the sample, required by Section 1219 of Title 17 of the California Code of Regulations, shall include the following procedures for the marking and packaging of blood tubes:

#### Marking blood tubes

The label for the blood collection tube shall contain at least the following information (see example below):

- Full name of subject.
- Date blood drawn.
- Initials of person drawing blood.
- Initials of witnessing officer.

![Label Example](image.png)

#### Packaging blood collection tubes

The blood collection tube shall be sealed in a blood alcohol envelope marked as follows:

- The blood sample envelope label shall include at least the following information:
  - Full name of subject.
  - Subject driver’s license number.
  - Submitting agency.
The following guidelines for obtaining blood samples for forensic alcohol analysis should be followed:

- The requesting officer should witness the withdrawal of the sample. When the officer witnesses the actual withdrawal of the blood, it may preclude the person drawing the blood from appearing as a witness at the time of the trial.
- The collection tube should be mixed after collection by gently inverting at least eight times.
- The person drawing the blood (e.g., nurse, doctor, or paramedic) shall fill out and initial the label and affix it firmly to the blood collection tube. The sample shall then be given to the officer who, in turn, shall initial the label and place the sample in the prescribed envelope. The officer shall immediately complete the required information on the envelope label and seal securely.
- Appropriate steps to ensure integrity of sample shall be taken:
  - Once the envelope or other container is sealed, it must not be opened except for analysis in the laboratory.
  - Each person having possession of the sealed samples shall sign his name in the space provided for recording the “chain of possession”.

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**Post-mortem blood samples**

BFS does not analyze post-mortem blood samples for ethanol content. You may wish to consult with the medical examiner for the collection and analysis of these types of samples.

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**For further information and additional resources**

Please contact your regional BFS laboratory with any further questions that you may have.

For a list of regional laboratories go to: [https://oag.ca.gov/sites/all/files/agweb/pdfs/bfs/bfs_brochure.pdf](https://oag.ca.gov/sites/all/files/agweb/pdfs/bfs/bfs_brochure.pdf) or [http://oag.ca.gov/bfs/](http://oag.ca.gov/bfs/)

To locate the most current Physical Evidence Bulletin please go to: [https://oag.ca.gov/sites/all/files/pdfs/cci/reference/peb_2.pdf](https://oag.ca.gov/sites/all/files/pdfs/cci/reference/peb_2.pdf)

If drugs are suspected please refer to Physical Evidence Bulletin #8 (Toxicology) for specific requirements of submission of samples to the Toxicology laboratory.