

FORENSIC ALCOHOL ANALYSIS

and

BREATH ALCOHOL ANALYSIS

Authorizing Legislation

**Regulations Relating to Forensic Alcohol
Analysis and Breath Alcohol Analysis**

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

STATE OF CALIFORNIA

DEPARTMENT OF HEALTH SERVICES

**2151 Berkeley Way
Berkeley, California 94704**

April 1986

CALIFORNIA CODES
HEALTH AND SAFETY CODE

DIVISION 101. ADMINISTRATION OF PUBLIC HEALTH
PART 1. CALIFORNIA DEPARTMENT OF HEALTH SERVICES
CHAPTER 4. REGULATION OF LABORATORY SERVICES
Article 1. (Reserved)
Article 2. Licensing of Laboratories.....100700-100775

100700. (a) Laboratories engaged in the performance of forensic alcohol analysis tests by or for law enforcement agencies on blood, urine, tissue, or breath for the purposes of determining the concentration of ethyl alcohol in persons involved in traffic accidents or in traffic violations shall comply with Group 8 (commencing with Section 1215) of Subchapter 1 of Chapter 2 of Division 1 of Title 17 of the California Code of Regulations, as they exist on December 31, 2004, until the time when those regulations are revised pursuant to Section 100703.

(b) Notwithstanding subdivision (a), the department shall not require laboratories to be licensed.

100701. All laboratories that are subject to the requirements of Section 100700 shall ensure that breath alcohol instruments and calibrating devices used in testing are listed in the conforming products list in the Federal Register by the National Highway Traffic Safety Administration of the United States Department of Transportation.

100702. (a) All laboratories that are subject to the requirements of Section 100700 shall follow the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) guidelines for proficiency testing. The required proficiency test must be obtained from any ASCLD/LAB approved test provider.

(b) Each laboratory shall participate annually in an external proficiency test for alcohol analysis.

(c) Each examiner shall successfully complete at least one proficiency test annually.

(d) Each laboratory shall have a procedure in writing that describes a review of proficiency test results, and, if applicable, the corrective action taken when proficiency test results are inconsistent with expected test results.

100703. (a) On or before July 1, 2005, the department shall establish a review committee.

(b) The review committee shall have eight members, including one person representing each of the following:

- (1) Prosecuting attorneys.
- (2) Law enforcement agencies.
- (3) Defense attorneys.
- (4) Coroners, pathologists, or medical examiners.
- (5) Criminalists.
- (6) Toxicologists.
- (7) Crime laboratory directors.
- (8) The State Department of Health Services.

(c) The review committee shall meet at least once in each five-year period after its initial meeting, or within 60 days of receipt of a request by the department or a member of the review committee.

(d) The review committee shall evaluate Group 8 (commencing with Section 1215) of Subchapter 1 of Chapter 2 of Division 1 of Title 17 of the California Code of Regulations and determine revisions that will limit those regulations to those that the review committee determines are reasonably necessary to ensure the competence of the laboratories and employees to prepare, analyze, and report the results of the tests and comply with applicable laws. The review committee shall submit a summary of revisions to the California Health and Human Services Agency.

(e) Within 90 days of receiving the review committee's revisions, the California Health and Human Services Agency may disapprove of one or more of the revisions.

(f) (1) Except as provided in paragraph (2), the department shall adopt regulations pursuant to this section that shall incorporate the review committee's revisions. Nothing in this section shall be construed as exempting the regulations from the requirements of Chapter 3.5 (commencing with Section 11340) of Part 1 of Division 3 of Title 2 of the Government Code.

(2) The department shall not adopt regulations to incorporate any review committee revisions that were disapproved under subdivision (e).

100725. On or after January 1, 1971, the department shall enforce this chapter and regulations adopted by the department.

100775. Any ampoules and their contents employed in a breath alcohol analysis test may be destroyed by the law enforcement agency in possession of them one year after the date of collection of the breath sample.

TITLE 17

FORENSIC ALCOHOL ANALYSIS

Group 8. Forensic Alcohol Analysis and Breath Alcohol Analysis

Article

1. General
2. Requirements for Forensic Alcohol Laboratories
3. Licensing Procedures
4. Training of Personnel
5. Collection and Handling of Samples
6. Methods of Forensic Alcohol Analysis
7. Requirements for Breath Alcohol Analysis
8. Records

Detailed Analysis

Article 1. General

Section

1215. Authority
- 1215.1. Definitions

Article 2. Requirements for Forensic Alcohol Laboratories

Section

1216. Authorization Requirement
- 1216.1. Qualifications for Licensing

Article 3. Licensing Procedures

Section

1217. Forensic Alcohol Laboratory License
- 1217.1. Renewal of Licenses
- 1217.2. Application Forms
- 1217.3. Report of Change or Discontinuance
- 1217.4. License Implications
- 1217.5. Licensing Records
- 1217.6. Inspection and Additional Requirements
- 1217.7. Surveys and Proficiency Tests
- 1217.8. Fees and Other Procedures

Article 4. Training of Personnel

Section

1218. Training Program Approval
- 1218.1. Additional Requirements
- 1218.2. Contracts

Article 5. Collection and Handling of Samples

Section

1219. General
- 1219.1. Blood Collection and Retention
- 1219.2. Urine Collection and Retention
- 1219.3. Breath Collection

Article 6. Methods of Forensic Alcohol Analysis

Section

- 1220. **General**
- 1220.1. **Standards of Performance**
- 1220.2. **Standards of Procedures**
- 1220.3. **Quality Control Program**
- 1220.4. **Expression of Analytical Results**

Article 7. Requirements for Breath Alcohol Analysis

Section

- 1221. **General**
- 1221.1. **Authorized Procedures**
- 1221.2. **Standard of Performance**
- 1221.3. **Approved Instruments**
- 1221.4. **Standards of Procedure**
- 1221.5. **Expression of Analytical Results**

Article 8. Records

Section

- 1222. **General**
- 1222.1. **Forensic Alcohol Laboratory Records**
- 1222.2. **Breath Alcohol Analysis Records**

Article 1. General

1215. Authority. Chapter 5 Sections 436.50-436.63 of Part 1 of Division 1 of the Health and Safety Code.

1215.1. Definitions. (a) "Alcohol" means the unique chemical compound, ethyl alcohol, with the exception that reference in these regulations to compounds to be avoided as skin antiseptics includes the generic class of organic compounds known as alcohols.

(b) "Forensic Alcohol Analysis" means the practical application of specialized devices, instruments, and methods by trained laboratory personnel to measure the concentration of ethyl alcohol in samples of blood, breath, urine, or tissue of persons involved in traffic accidents or traffic violations.

(c) "Breath Alcohol Analysis" means analysis of a sample of a person's expired breath, using a breath testing instrument designed for this purpose, in order to determine the concentration of ethyl alcohol in the person's blood.

(d) "Concentration" means the weight amount of alcohol contained in a unit volume of liquid or a unit volume of gas under specified conditions of temperature and pressure; in the case of a solid tissue specimen, "concentration" means the weight amount of alcohol contained in a unit weight of specimen.

(e) "Forensic Alcohol Laboratory" means a place at which specialized apparatus, instruments, and methods are used by trained laboratory personnel to measure the concentration of alcohol in samples of blood, breath, urine, or tissue of persons involved in traffic accidents or in traffic violations; this may be an activity of a laboratory engaged in activities other than alcohol analysis.

(f) "Forensic Alcohol Supervisor" means a person employed by a forensic alcohol laboratory who can be responsible for all aspects of the performance of forensic alcohol analysis and for the supervision of personnel who perform such analysis.

(g) "Forensic Alcohol Analyst" means a person employed by a forensic alcohol laboratory who performs the technical procedures of forensic alcohol analysis.

(h) "Forensic Alcohol Analyst Trainee" means a person employed by a forensic alcohol laboratory for the purpose of receiving comprehensive practical experience and instruction in the technical procedures of forensic alcohol

analysis under the supervision of a forensic alcohol supervisor or forensic alcohol analyst.

(i) "Method" means the steps used by a trained person to make a measurement of alcohol concentration.

(j) "Instrument" or "Device" means any item or combination of items of equipment used to make a measurement of alcohol concentration; simple and complex devices are included in this meaning.

(k) "License" means a document issued by the State Department of Health to a laboratory to perform the tests referred to in the Health and Safety Code, Sections 436.51 and 436.52.

(l) "Sample" or "Specimen" means a representative portion of breath, blood, urine, or tissue or of an artificially constituted material, taken for the purpose of measuring its alcohol concentration.

(m) "Alveolar" refers to the smallest air sacs in the lungs and to that portion of the expired breath which is in equilibrium with respect to alcohol with the immediately adjacent pulmonary blood.

(n) "Department" means the California State Department of Health and its duly authorized representatives.

Article 2. Requirements for Forensic Alcohol Laboratories

1216. Authorization Requirement. (a) Every laboratory performing forensic alcohol analysis shall have a valid license issued in accordance with the provisions of these regulations.

(1) Forensic alcohol analysis shall be performed only by persons who meet the qualifications set forth in these regulations for forensic alcohol supervisors, forensic alcohol analysts, or forensic alcohol analyst trainees.

(A) A trainee may perform forensic alcohol analysis only under the supervision of a forensic alcohol supervisor or forensic alcohol analyst.

(2) The Department shall not be limited by these regulations in performing functions in administration of the alcohol analysis and licensing program.

1216.1. Qualifications for Licensing. (a) A laboratory meets the qualifications for licensing by:

(1) Employing at least one forensic alcohol supervisor. If forensic alcohol analysis is performed by persons other than forensic alcohol supervisors, such persons shall meet the qualifications set forth in these regulations for forensic alcohol analysts or forensic alcohol analyst trainees;

(2) Maintaining a quality control program in forensic alcohol analysis procedures;

(3) Demonstrating satisfactory performance in a proficiency testing program conducted by or approved by the Department;

(4) Passing such on-site inspections as the Department may require;

(5) Showing ability to meet the requirements set forth in these regulations.

(b) These qualifications shall be maintained at all times by each licensed laboratory.

(c) The Department may deny a license or renewal thereof, or take disciplinary action against a licensee, for failure to maintain these qualifications in a manner which meets the Department's standards for approval.

(d) Whenever a licensed laboratory employing only one forensic alcohol supervisor loses that person, the Department may upon petition of the laboratory extend the license for a period not exceeding 90 days during which time the laboratory shall hire another forensic alcohol supervisor.

(1) Such an extension shall be contingent on the laboratory's having in its employ at least one forensic alcohol analyst and upon the laboratory's successfully demonstrating to the Department continued competence in forensic alcohol analysis through such proficiency tests, examinations, and on-site inspections as the Department may require.

(e) A forensic alcohol supervisor is a person who meets the following qualifications:

(1) Possesses a baccalaureate or higher degree, or an equivalent in chemistry, biochemistry, or other appropriate discipline as determined by the Department;

(2) Has two years of experience in performing forensic alcohol analysis, such experience to include experience in interpretation and correlation of alcohol analyses with subjective observations of the demeanor and behavior of persons who have ingested known amounts of ethyl alcohol; or, in lieu of such two years of such experience, satisfactorily completes a training course approved by the Department, such training course to include at minimum the following schedule of subjects:

(A) Value and purpose of forensic alcohol analysis, including breath alcohol analysis;

(B) Physiological action of alcohol;

(C) Pharmacology and toxicology of alcohol;

(D) Laboratory methods of alcohol analysis;

(E) Instruments and procedures for breath alcohol analysis;

(F) Practical laboratory demonstration of the student's ability to perform alcohol analysis;

(G) Interpretation of results of alcohol analysis, including correlation of alcohol analyses with subjective observations of the demeanor and behavior of persons who have ingested known amounts of alcohol;

(H) Court testimony;

(I) Court decisions regarding chemical tests of alcohol to determine alcohol influence; and

(J) Requirements of these regulations;

(3) Successfully demonstrates accuracy in the analysis of proficiency test samples submitted by the Department, and successfully passes examinations prescribed by the Department;

(4) Demonstrates the ability to adhere to the provisions of these regulations; or (in lieu of (1) and (2) above)

(5) Either is a person who, prior to January 1, 1971, qualified as director of a clinical laboratory operating under the provisions of the California Business and Professions Code, or is a person who, for a period of one year prior to January 1, 1971, has been employed in the activities of a forensic alcohol supervisor.

(f) A forensic alcohol analyst is a person who meets the following qualifications:

(1) Successfully completes at least 60 semester-hours, or their equivalent in quarter-hours, of college level courses, including 8 hours of general chemistry and 3 hours of quantitative analysis;

(2) Successfully completes a training period in alcohol analysis on forensic or clinical specimens in a forensic alcohol laboratory or in a clinical laboratory;

(3) Performs during the training period a minimum of 25 analyses of alcohol concentration in blood samples, at least half of which contain alcohol;

(4) Successfully demonstrates accuracy in the analysis of proficiency test samples submitted by the Department, and successfully passes examinations prescribed by the Department;

(5) Demonstrates ability to adhere to the provisions of these regulations; or (in lieu of (1), (2), and (3) above)

(6) Either is a person who, prior to January 1, 1971, was a clinical laboratory technologist licensed under the provisions of the California Business and Professions Code, or is a person who, for a period of one year prior to January 1, 1971, has been employed in the activities of a forensic alcohol analyst.

(g) A forensic alcohol analyst trainee is a person who meets the following qualifications:

(1) Meets the educational qualification set forth as (1) for a forensic alcohol analyst;

(2) Is employed by a licensed forensic alcohol laboratory.

Article 3. Licensing Procedures

1217. Forensic Alcohol Laboratory License. (a) Upon receipt of a completed application which shows ability to meet the requirements set forth in these regulations, and upon payment of any required fee, the Department shall submit such proficiency test samples and perform such examinations as are required for that laboratory to complete the qualifications.

(b) Upon the laboratory's successfully completing all the qualifications, the Department shall issue to the applicant laboratory a forensic alcohol laboratory license.

1217.1. Renewal of Licenses. (a) Licenses under these regulations shall be renewed as required by the Department as long as the activity requiring authorization continues. Renewal shall be contingent upon the laboratory continuing in the qualifications set forth in these regulations.

(1) A forensic alcohol laboratory license shall be valid from January 1 to December 31 of a calendar year. Applications for renewal and applicable fees shall be submitted to the Department on or before October 1 of each year.

(2) Failure to apply for renewal shall result in forfeiture after a period of three months from the day on which the application for renewal

should have been submitted with the exception that the Department may grant a temporary extension under special circumstances.

(3) An application for renewal shall not list as a forensic alcohol analyst trainee any person who fails to comply with the requirements of Section 1216.1(f)(4) within a period of one year after he was first listed with the Department as a trainee. The Department may extend this period for a justifiable reason such as illness.

1217.2. Application Forms. Application for license and renewal thereof, shall be made on forms furnished by the Department. The applicant shall set forth all pertinent information called for by the form.

1217.3. Report of Change or Discontinuance. (a) A person responsible for the operation of a forensic alcohol laboratory shall report to the Department in writing within 30 days any change in qualified personnel who may be performing forensic alcohol analysis, change of ownership, change of address or change or discontinuance of an activity authorized under these regulations.

(b) Such reports shall be made on forms furnished by the Department and shall set forth all pertinent information called for by the form.

(c) Persons who formerly qualified as forensic alcohol supervisors or forensic alcohol analysts in another laboratory may be required to demonstrate again their ability to meet the requirement of Section 1216.1(e)(3) or 1216.1(f)(4) using the method, apparatus and facilities of the forensic alcohol laboratory which newly lists them in such a Report of Change or Discontinuance.

1217.4 License Implications. Licenses issued under these regulations shall not imply approval of anything carried out by a laboratory other than what is specified on the document.

1217.5. Licensing Records. Forensic Alcohol Laboratory Licenses shall become part of permanent records available to the courts for legal proceedings or to the Department.

1217.6. Inspection and Additional Requirements. (a) Display of Licenses. Licenses issued under these regulations shall be displayed on request to representatives of the Department.

(b) Access to Premises. The Department may enter at all reasonable times upon any laboratory for the purpose of determining whether or not there is compliance with the provisions of these regulations.

1217.7. Surveys and Proficiency Tests. (a) Laboratories having been licensed or applying for licensing as forensic alcohol laboratories shall be subject to on-site surveys by representatives of the Department, the results of which must meet the requirements of these regulations, and shall accept periodic evaluation samples, perform analyses and report the results of such analyses to the Department.

(b) These analytical results shall be used by the Department to evaluate the accuracy of the forensic alcohol analyses performed by the laboratory, and the results must meet the requirements of these regulations.

1217.8. Fees and Other Procedures. The annual application fee for a Forensic Alcohol Laboratory License or its renewal shall be one hundred dollars (\$100). A laboratory operated by the state, city or county or other public organization shall be exempt from the annual application fee requirement. Other procedures in the administration of these regulations shall be carried out as set forth in Chapter 5 (commencing with section 436.50) of Part 1 of Division 1 of the Health and Safety Code. Such other procedures include suspension or revocation of license, denial of license, and disciplinary action.

Article 4. Training of Personnel

1218. Training Program Approval. Any organization, laboratory, institution, school, or college conducting a course of instruction for persons to qualify under these regulations shall submit a course summary and list of instructors and their qualifications to the Department for approval.

1218.1. Additional Requirements. At the discretion of the Department, any phase or portion of a training program shall be subject to alteration in an effort to update the program as technological advances are made or if a portion has been judged inappropriate.

1218.2. Contracts. The Department may contract with persons it deems qualified to administer such practical tests and written or oral examinations as

may be required under these regulations. This section shall not be construed to authorize the delegation of any discretionary functions conferred on the Department by law, including, but not limited to, the evaluation of tests and examinations.

Article 5. Collection and Handling of Samples

1219. General. Samples taken for forensic alcohol analysis and breath alcohol analysis shall be collected and handled in a manner approved by the Department. The identity and integrity of the samples shall be maintained through collection to analysis and reporting.

1219.1. Blood Collection and Retention. (a) Blood samples shall be collected by venipuncture from living individuals as soon as feasible after an alleged offense and only by persons authorized by Section 13354 of the Vehicle Code.

(b) Sufficient blood shall be collected to permit duplicate determinations.

(c) Alcohol or other volatile organic disinfectant shall not be used to clean the skin where a specimen is to be collected. Aqueous benzalkonium chloride (zephiran), aqueous merthiolate or other suitable aqueous disinfectant shall be used.

(d) Blood samples shall be collected using sterile, dry hypodermic needles and syringes, or using clean, dry vacuum type containers with sterile needles. Reusable equipment, if used, shall not be cleaned or kept in alcohol or other volatile organic solvent.

(e) The blood sample shall be deposited into a clean, dry container which is closed with an inert stopper.

(1) Alcohol or other volatile organic solvent shall not be used to clean the container.

(2) The blood shall be mixed with an anticoagulant and a preservative.

(f) When blood samples for forensic alcohol analysis are collected post-mortem, all practical precautions to insure an uncontaminated sample shall be employed, such as:

(1) Samples shall be obtained prior to the start of any embalming procedure. Blood samples shall not be collected from the circulatory system effluent during arterial injection of embalming fluid. Coroner's samples do not need a preservative added if stored under refrigeration.

(2) Care shall be taken to avoid contamination by alcohol from the gastrointestinal tract directly or by diffusion therefrom. The sample shall be taken from a major vein or the heart.

(g) In order to allow for analysis by the defendant, the remaining portion of the sample shall be retained for one year after the date of collection.

(1) In coroner's cases, blood samples shall be retained for at least 90 days after date of collection.

(2) Whenever a sample is requested by the defendant for analysis and a sufficient sample remains, the forensic alcohol laboratory or law enforcement agency in possession of the original sample shall continue such possession, but shall provide the defendant with a portion of the remaining sample in a clean container together with a copy or transcript of the identifying information carried on the original sample container.

1219.2. Urine Collection and Retention. (a) The only approved urine sample shall be a sample collected no sooner than twenty minutes after first voiding the bladder.

(b) The specimen shall be deposited in a clean, dry container which also contains a preservative.

(c) In order to allow for analysis by the defendant, the remaining portion of the sample shall be retained for one year after the date of collection.

(1) Whenever a sample is requested by the defendant for analysis and a sufficient sample remains, the forensic alcohol laboratory or law enforcement agency in possession of the original sample shall continue such possession, but shall provide the defendant with a portion of the remaining sample in a clean container together with a copy or transcript of the identifying information carried by the original sample container.

1219.3. Breath Collection. A breath sample shall be expired breath which is essentially alveolar in composition. The quantity of the breath sample shall be established by direct volumetric measurement. The breath sample shall be collected only after the subject has been under continuous observation for at least fifteen minutes prior to collection of the breath sample, during which time the subject must not have ingested alcoholic beverages or other fluids, regurgitated, vomited, eaten, or smoked.

Article 6. Methods of Forensic Alcohol Analysis

1220. General. (a) All laboratory methods used for forensic alcohol analysis shall be subject to standards set forth in this Article.

(b) Each licensed forensic alcohol laboratory shall have on file with the Department detailed, up-to-date written descriptions of each method it uses for forensic alcohol analysis.

(1) Such descriptions shall be immediately available to the person performing an analysis and shall be available for inspection by the Department on request.

(2) Each such description shall include the calibration procedures and the quality control program for the method.

1220.1. Standards of Performance. (a) Methods for forensic alcohol analysis shall meet the following standards of performance:

(1) The method shall be capable of the analysis of a reference sample of known alcohol concentration within accuracy and precision limits of plus or minus 5 percent of the value; these limits shall be applied to alcohol concentrations which are 0.10 grams per 100 milliliters or higher;

(2) The method shall be capable of the analysis of ethyl alcohol with a specificity which is adequate and appropriate for traffic law enforcement.

(3) The method should be free from interference from anticoagulants and preservatives added to the sample;

(4) Blood alcohol results on post-mortem samples shall not be reported unless the oxidizable substance is identified as ethyl alcohol by qualitative test;

(5) The method shall give a test result which is always less than 0.01 grams of alcohol per 100 milliliters of blood when living subjects free of alcohol are tested.

(b) The ability of methods to meet the standards of performance set forth in this Section shall be evaluated by the Department using a laboratory's proficiency test results and such ability must meet the requirements of these regulations.

1220.2. Standards of Procedure. (a) Methods for forensic alcohol analysis shall meet the following standards of procedure:

(1) The method shall be calibrated with standards which are water solutions of alcohol.

(A) Such alcohol solutions are secondary standards.

(B) Each forensic alcohol laboratory shall establish the concentration of each lot of secondary alcohol standards it uses, whether prepared or acquired, by an oxidimetric method which employs a primary standard, such as United States National Bureau of Standards potassium dichromate;

(2) The procedure shall include blank and secondary alcohol standard samples at least once each day that samples are subjected to forensic alcohol analysis.

(A) The blank and secondary alcohol standard samples shall be taken through all steps of the method used for forensic alcohol analysis of samples.

(3) The procedure shall also include analysis of quality control reference samples as described in Section 1220.3 and shall include at least duplicate analyses of samples for forensic alcohol analysis.

(A) A quality control reference sample shall not be taken from the same lot of alcohol solution which is used as a secondary alcohol standard.

(4) Alcohols or other volatile organic solvents shall not be used to wash or rinse glassware and instruments used for alcohol analysis;

(5) All instruments used for alcohol analysis shall be in good working order and routinely checked for accuracy and precision.

1220.3. Quality Control Program. (a) Methods for forensic alcohol analysis shall be performed in accordance with the following quality control program:

(1) For each method of forensic alcohol analysis it performs, each forensic alcohol laboratory shall make or acquire a suitable quality control reference material containing alcohol, a sample of which it shall analyze along with each set of samples; the alcohol concentration in the reference material shall be between 0.10 and 0.20 grams per 100 milliliters of liquid;

(2) For each lot of quality control reference material, the laboratory shall determine a mean value of at least 20 replicate analyses, at a rate of no more than 2 analyses per day, with the method used for analysis of samples for forensic alcohol analysis;

(3) Acceptable limits of variation for the method shall be set as follows:

(A) The lower limit shall be calculated by subtracting, from the mean value, 0.01 grams per 100 milliliters;

(B) The higher limit shall be calculated by adding, to the mean value, 0.01 grams per 100 milliliters;

(4) At least one sample of the quality control reference material shall be analyzed with each set of samples analyzed for the purpose of forensic alcohol analysis;

(5) Whenever analysis of the quality control reference material is outside the acceptable limits, the method shall be regarded to be in error, and a forensic alcohol supervisor shall take remedial action to investigate and correct the source of error;

(6) Until such time as the error has been corrected, as shown by return of the analysis of the quality control reference material to values within the acceptable limits, no samples shall be analyzed for the purpose of forensic alcohol analysis.

1220.4. Expression of Analytical Results. (a) With the exception of tissue analysis, all analytical results shall be expressed in terms of the alcohol concentration in blood, based on the number of grams of alcohol per 100 milliliters of blood.

(1) The symbols, grams %, ‰, and % (W/V), shall be regarded as acceptable abbreviations of the phrase, grams per 100 milliliters of liquid.

(b) Analytical results shall be reported to the second decimal place, deleting the digit in the third decimal place when it is present.

(c) Blood alcohol concentrations less than 0.01% in living subjects may be reported as negative.

(d) Blood alcohol concentrations less than 0.02% on post-mortem blood samples may be reported as negative.

(e) A urine alcohol concentration shall be converted to an equivalent blood alcohol concentration by a calculation based on the relationship: the amount of alcohol in 1.3 milliliters of blood is equivalent to the amount of alcohol in 1 milliliter of urine.

(f) A breath alcohol concentration shall be converted to an equivalent blood alcohol concentration by a calculation based on the relationship: the amount of

alcohol in 2,100 milliliters of alveolar breath is equivalent to the amount of alcohol in 1 milliliter of blood.

(g) Tissue analysis results shall be expressed in terms of a weight amount of alcohol in a unit weight of the specimen.

Article 7. Requirements for Breath Alcohol Analysis

1221. General. Breath alcohol analysis shall be performed in accordance with standards set forth in this Article.

1221.1. Authorized Procedures. (a) Breath alcohol analysis shall be performed only with instruments and related accessories which meet the standards of performance set forth in these regulations.

(b) Such instruments may be used for the analysis of breath samples in places other than licensed forensic alcohol laboratories and by persons other than forensic alcohol supervisors, forensic alcohol analysts and forensic alcohol analyst trainees only if such places and persons are under the direct jurisdiction of a governmental agency or licensed forensic alcohol laboratory.

(1) Breath alcohol analysis by persons other than forensic alcohol supervisors, forensic alcohol analysts and forensic alcohol analyst trainees shall be restricted to the immediate analysis of breath samples collected by direct expiration by the subject into the instrument in which the measurement of alcohol concentration is performed.

(2) Except for the requirements of Section 1220.4, such immediate analysis shall not be subject to the requirements of Article 6.

1221.2. Standard of Performance. (a) Instruments for breath alcohol analysis shall meet the following standard:

(1) The instrument and any related accessories shall be capable of conforming to the "Model Specifications for Evidential Breath Testing Devices" of the National Highway Traffic Safety Administration of the U.S. Department of Transportation, which were published in the Federal Register, Vol. 49, No. 242, Pages 48854 - 48872, December 14, 1984, and are hereby adopted and incorporated.

(b) The ability of instruments and any related accessories to conform to the standard of performance set forth in this Section shall be tested by the U.S. Department of Transportation.

1221.3. Approved Instruments. (a) Only such types and models of instruments and related accessories as are named in the "Conforming Products List" published in the Federal Register by the National Highway Traffic and Safety Administration of the U.S. Department of Transportation shall be used for breath alcohol analysis in this State.

1221.4. Standards of Procedure. (a) Procedures for breath alcohol analysis shall meet the following standards:

(1) For each person tested, breath alcohol analysis shall include analysis of 2 separate breath samples which result in determinations of blood alcohol concentrations which do not differ from each other by more than 0.02 grams per 100 milliliters.

(2) The accuracy of instruments shall be determined.

(A) Such determination of accuracy shall consist, at a minimum, of periodic analysis of a reference sample of known alcohol concentration within accuracy and precision limits of plus or minus 0.01 grams % of the true value; these limits shall be applied to alcohol concentrations from 0.10 to 0.30 grams %. The reference sample shall be provided by a forensic alcohol laboratory.

1. Such analysis shall be performed by an operator as defined in Section 1221.4(a)(5), and the results shall be used by a forensic alcohol laboratory to determine if the instrument continues to meet the accuracy set forth in Section 1221.4(a)(2)(A).

(B) For the purposes of such determinations of accuracy, "periodic" means either a period of time not exceeding 10 days or following the testing of every 150 subjects, whichever comes sooner.

(3) Breath alcohol analysis shall be performed only with instruments for which the operators have received training, such training to include at minimum the following schedule of subjects:

- (A) Theory of operation;
- (B) Detailed procedure of operation;
- (C) Practical experience;
- (D) Precautionary checklist;
- (E) Written and/or practical examination.

(4) Training in the procedures of breath alcohol analysis shall be under the supervision of persons who qualify as forensic alcohol

supervisors, forensic alcohol analysts or forensic alcohol analyst trainees in a licensed forensic alcohol laboratory.

(A) After approval as set forth in Section 1218, the forensic alcohol laboratory is responsible for the training and qualifying of its instructors.

(5) An operator shall be a forensic alcohol supervisor, forensic alcohol analyst, forensic alcohol analyst trainee or a person who has completed successfully the training described under Section 1221.4(a)(3) and who may be called upon to operate a breath testing instrument in the performance of his duties.

(6) Records shall be kept for each instrument to show the frequency of determination of accuracy and the identity of the person performing the determination of accuracy.

(A) Records shall be kept for each instrument at a licensed forensic alcohol laboratory showing compliance with this Section.

1221.5. Expression of Analytical Results. Results of breath alcohol analysis shall be expressed as set forth in Section 1220.4.

Article 8. Records

1222. General. Forensic alcohol laboratories and law enforcement agencies shall maintain records which clearly represent their activities which are covered by these regulations. Such records shall be available for inspection by the Department on request.

1222.1. Forensic Alcohol Laboratory Records. (a) Each laboratory which is licensed to perform forensic alcohol analysis shall keep the following records for a period of at least three years:

(1) An up-to-date record of persons in its employ who are qualified as forensic alcohol supervisors and forensic alcohol analysts; the record shall include the qualifications of each such person, including education, experience, training and performance in proficiency tests and examinations;

(2) A list of persons in its employ who are forensic alcohol analyst trainees, the date on which each such person began his training period and the number and results of analyses performed during the training period;

(3) Records of samples analyzed by that laboratory under these regulations, their results and the identity of persons performing the analyses;

(4) Records of the quality control program;

(5) Records of laboratory performance evaluation in alcohol analysis as shown by results of proficiency tests;

(6) Records of such determinations of accuracy of breath testing instruments as a laboratory may perform for law enforcement agencies;

(7) Records of such training as a laboratory may provide to persons who operate breath testing instruments for law enforcement agencies.

1222.2. Breath Alcohol Analysis Records. (a) Each agency shall keep the following records for breath testing instruments which are under its jurisdiction:

(1) Records of instrument determinations of accuracy;

(2) Records of analyses performed, results and identities of the persons performing analyses;

(3) At the location of each instrument, the precautionary checklist to be used by operators of the instrument.

**UNIFORM STANDARDS FOR
WITHDRAWAL, HANDLING, AND PRESERVATION OF
BLOOD SAMPLES FOR
FORENSIC ALCOHOL ANALYSIS**

In accordance with Vehicle Code Section 23158(f) the Department of California Highway Patrol, in cooperation with the Department of Health and the Department of Justice, has adopted uniform standards for the withdrawal, handling, and preservation of blood samples prior to analysis.

The standards are outlined below :

- A. Blood samples collected from persons involved in traffic accidents or traffic violations shall be collected, handled, and preserved as required by Sections 1219 and 1219.1 of Title 17 of the California Administrative Code.
- B. Maintenance of identity and integrity of the sample, required by Section 1219 of Title 17 of the California Administrative Code, shall include the following procedures :
 1. Label for Tube or Vial.
 - a. The label of the blood vial or tube shall contain at least the following information :
 - (1) Full name of subject.
 - (2) Date blood drawn.
 - (3) Initials of person drawing blood.
 - (4) Initials of witnessing Officer.
 2. Envelope or Other Container Used for Enclosing and Identifying Blood Sample Tube or Vial.
 - a. The blood sample envelope or other container label shall include at least the following information :
 - (1) Full name of subject.
 - (2) Whether subject is alive or dead.
 - (3) Submitting agency.
 - (4) Geographical location where blood sample was drawn ; i.e., name and/or address of hospital, jail, or other facility.
 - (5) Name of person drawing blood sample.
 - (6) Date blood sample drawn.
 - (7) Time blood sample drawn.
 - (8) Signature of witnessing Officer.

- (9) A form for establishing the chain of possession such as:
CHAIN OF POSSESSION: (To be filled in by each person having possession of sample.)

Name	Time Received	Date

- b. Other information, such as agency or laboratory number, offense charged, anatomical location from which blood sample was drawn, or any special instructions may be added.

C. Procedure for Obtaining Blood Samples.

1. The requesting Officer should witness the withdrawal of the sample. When the Officer witnesses the actual withdrawal of the blood, it may be unnecessary for the person drawing the blood to appear as a witness at the time of the trial.
2. The person drawing the blood shall fill out and initial the label and affix it firmly to the tube or vial. The sample shall then be given to the Officer who, in turn, shall initial the label and place the sample in the prescribed envelope or other container. The Officer shall immediately complete the required information on the envelope or other container label and seal container securely.
3. Appropriate steps to insure integrity of sample shall be taken.
 - a. Once the envelope or other container is sealed, it must not be opened except for analysis in the laboratory.
 - b. Each person having possession of the sealed sample shall sign his name in the space provided for recording the "chain of possession".

Standards Adopted
October 10, 1966

Standards Revised
March 1, 1973