

**Criminal Justice Standards and Training Commission
Florida Department of Law Enforcement**

Agency Inspector- Intoxilyzer 9000
A Specialized Training Course

24-Hour Course

Lesson Plan

TRAINING SCHOOL	853 CLASS NUMBER	SESSION DATES

Breath Test Operator Intoxilyzer 9000 Course

Course Summary

Instructional Goal: To ensure that each student can verify the proper operation and calibration of an evidentiary breath test instrument by performing an Agency Inspection in accordance with Chapter 11D-8, F.A.C.

Structure of Course: 8 Units

Total Estimated Time: 24 Hours

Subject Lessons:

- Lesson One: Chapter 11D-8, Florida Administrative Code
- Lesson Two: Dynamics of Breath Testing
- Lesson Three: Breath Test Instrumentation
- Lesson Four: Reference Sample Device and Dry Gas Standards
- Lesson Five: Agency Inspections
- Lesson Six: Laboratory Practical
- Lesson Seven: Courtroom Testimony
- Lesson Eight: Proficiency and Written Examination

Instructor Note

The lesson plans provide guidance to the instructor to effectively teach the course objectives. The instructor is responsible for effectively presenting the objectives and is free to adapt or supplement the course materials with his/her own materials to meet the needs of the students.

Each student must be provided with a current copy of Chapter 11D-8, F.A.C.

Student Competency Requirements

Each student must attend all lessons of the course and satisfy the following components to successfully complete this course:

Proficiency: Each student must achieve a “pass” grade on each of the following:

- The proper inspection of an approved breath test instrument in accordance with FDLE/ATP Form 39a – Agency Inspection Procedures – Intoxilyzer 9000
- Proper completion of all required forms (FDLE/ATP Form 40a – Agency Inspection Report – Intoxilyzer 9000)
- Properly performing a breath test in accordance with FDLE/ATP Form 37a – Operational Procedures – Intoxilyzer 9000
- Proper completion of FDLE/ATP Form 38a – Breath Alcohol Test Affidavit

Final Written Examination: Each student must achieve a minimum score of 80% on the final written examination.

Agency Inspector Intoxilyzer 9000 Course Lesson Plan

Lesson One Chapter 11D-8, Florida Administrative Code

Purpose

The student will learn the role of an Agency Inspector as it relates to ensuring the evidentiary breath test instrument CMI, Inc Intoxilyzer 9000 is providing accurate and reliable results.

Resources

Chapter 11D-8, Florida Administrative Code
Chapters 316, 322, and 327, Florida Statutes

Objectives

1.1 Define Agency Inspector and Agency Inspection.

- Agency Inspector – a person who has been issued an Agency Inspector permit by the Department.
- Agency Inspection – the periodic testing of the calibration and operation of a breath test instrument, including all required preventive maintenance, in accordance with Rule 11D-8.006, F.A.C., and performed by a person authorized by the Department.
 - The Agency Inspection process ensures the instrument is operating properly and providing accurate and reliable results.

1.2 State the role of an Agency Inspector.

- To verify an evidentiary breath test instrument is functioning properly and is in proper calibration by conducting an Agency Inspection in accordance with Chapter 11D-8, F.A.C.
- An Agency Inspector may also be a Breath Test Operator and conduct breath tests in accordance with Chapter 11D-8, F.A.C. The role of a Breath Test Operator is to collect and analyze evidence in the form of breath samples in accordance with Chapter 11D-8, F.A.C.

OBTAINING AN AGENCY INSPECTOR- INTOXILYZER 9000 PERMIT

1.3 List the requirements outlining the qualifications an applicant for an Agency Inspector permit must meet.

- Have been issued a Breath Test Operator- Intoxilyzer 9000 permit issued by the Department valid at the time the application is submitted;
- Present employment by an agency, or the Department;
- Successful completion of the basic Agency Inspector- Intoxilyzer 9000 Course approved by the Criminal Justice Standards and Training Commission; and
- Submit to the Department a complete written application.

1.4 State an Agency Inspection of an evidentiary breath test cannot be conducted until an Agency Inspector permit is issued by the Department or confirmation of issuance from the Department is received via their training profile.

- Successful completion of the Agency Inspector- Intoxilyzer 9000 Course alone does not necessarily mean that the applicant will be issued an Agency Inspector permit by the Department. The course completion certificate given by the training center is not a permit.

PERMIT

1.5 Define Permit.

- Permit – when issued by the Department, certifies that the holder has met all necessary qualifications, remains in full compliance with these rules and is authorized to perform all related duties. A permit is issued only to a qualified applicant and remains valid and in full effect until determined otherwise by the Department.
 - Information concerning a person's permit can be obtained in ATMS (Automated Training Management System) or by calling the Department.
 - **Agency Inspector courses and permits for the Intoxilyzer 8000 and Intoxilyzer 9000 instruments are not interchangeable.**

MAINTAINING AN AGENCY INSPECTOR- INTOXILYZER 9000 PERMIT

1.6 State an Agency Inspector permit is maintained through successful completion of continuing education.

- Agency Inspectors must satisfy continuing education requirements in order to maintain valid permits; and
- Continuing education requires successful completion of the applicable Commission-approved Renewal Course by June 30 following the fourth permit anniversary date, and during each subsequent four-year cycle also known as a permit cycle. Rule 11D-8.002(26)
- Successful completion of the Agency Inspector- Intoxilyzer 9000 Renewal Course renews a person's Agency Inspector- Intoxilyzer 9000 and Breath Test Operator- Intoxilyzer 9000 permits.

1.7 List the requirements that must be met if continuing education is not met.

- If an agency inspector does not attend the Agency Inspector Renewal Course within their continuing education cycle, once the cycle is up, the permit becomes INACTIVE, and they must not conduct Agency Inspections until they attend and successfully complete an Agency Inspector Renewal Course within the next 6 months.
- Failure to complete an Agency Inspector Renewal Course prior to December 31 following the permit cycle continuing education due date will result in the permit EXPIRING and the full Agency Inspector Course will need to be taken and a new permit applied for.

1.8 List the requirements that must be followed if an Agency Inspector does not successfully complete a renewal course.

- If an Agency Inspector fails an Agency Inspection Renewal Course, they shall not perform any duties authorized by the permit until they successfully complete an Agency Inspector Course.

DEPARTMENT INSPECTION

1.9 Identify the Department Inspection and instrument registration processes.

- Department Inspections and registrations of evidentiary instruments are required by Rule 11D-8.004, F.A.C., which also prescribes the process for Department Inspections and instrument registrations.
- Only registered instruments can be used for evidentiary breath testing. Training instruments are not registered.
- Department Inspections are performed in accordance with Form 36a – Department Inspection Procedures - Intoxilyzer 9000. Department Inspection results are reported on Form 41a – Department Inspection Report - Intoxilyzer 9000.
- Evidentiary instrument registrations are recorded on the Evidentiary Instrument Registration form.

1.10 Identify when Department Inspections are required.

- Before an instrument is initially placed into evidentiary use.
- Subsequent to repair.
- At least once every 12 months.
 - Department Inspections must not exceed 12 months from the date of the last Department Inspection. An instrument may not be used for evidential testing after the Department Inspection due date.
 - Example: A Department Inspection is completed on April 5, 2025. In order to remain in compliance and be used for evidential testing, the instrument must have its next Department Inspection completed by April 5, 2026.

**Agency Inspector Course
Lesson Plan**

**Lesson One
Chapter 11D-8, Florida Administrative Code**

Review Questions

1. **What is the role of an Agency Inspector?**

2. **What are the qualifications that must be met in order to apply for an Agency Inspector permit?**

3. **True or False. An Agency Inspector can conduct an Agency Inspection after completing the Agency Inspector Course.**

4. **To maintain an Agency Inspector permit, when must continuing education be met?**

5. **What course must an Agency Inspector take if continuing education is not met?**

6. **True or False. An Agency Inspector permitted to use the Intoxilyzer 8000 is automatically permitted to use the Intoxilyzer 9000.**

7. **What course must be taken if an Agency Inspector fails the Agency Inspector Renewal Course?**

Agency Inspector Intoxilyzer 9000 Course Lesson Plan

Lesson One Chapter 11D-8, Florida Administrative Code

Review Answers

1. What is the role of an Agency Inspector?

To verify an evidentiary breath test instrument is functioning properly and is in proper calibration by conducting an Agency Inspection in accordance with Chapter 11D-8, F.A.C.

2. What are the qualifications that must be met in order to apply for an Agency Inspector permit?

- Have been issued a Breath Test Operator- Intoxilyzer 9000 permit issued by the Department valid at the time the application is submitted;
- Present employment by an agency, or the Department;
- Successful completion of the basic Agency Inspector Course approved by the Criminal Justice Standards and Training Commission; and
- Submit to the Department a complete written application.

3. True or False. An Agency Inspector can conduct an Agency Inspection after completing the Agency Inspector Course.

False. In order to conduct an Agency Inspection, a person must have been issued an Agency Inspector permit. They may also confirm their permit has been issued by the Department via their ATMS training profile.

4. To maintain an Agency Inspector permit, when must continuing education be met?

Continuing education required successful completion of the applicable Commission-approved Renewal Course by June 30th following the fourth permit anniversary date, and during each subsequent four-year cycle. The Renewal Course may also be taken in the 6 months subsequent to the continuing education due date before the permit expires requiring the permit holder to take the Agency Inspector Course.

5. What course must an Agency Inspector take if continuing education is not met?

If an Agency Inspector does not attend the Agency Inspector Renewal Course within their continuing education cycle, once the cycle is up, their permit will become INACTIVE and they must not conduct Agency Inspections until they attend and successfully complete an Agency Inspector Renewal Course. If the Agency Inspector Renewal course is not completed by December 31st of the same year mandatory continuing education is due, the permit will EXPIRE, and the inspector will need to attend the applicable Agency Inspector Course.

6. True or False. An Agency Inspector permitted to use the Intoxilyzer 8000 is automatically permitted to use the Intoxilyzer 9000.

False. In order to conduct the Agency Inspection of an Intoxilyzer 9000 a person must have completed the corresponding Breath Test Operator and Agency Inspector- Intoxilyzer 9000 courses.

7. What course must be taken if an Agency Inspector fails the Agency Inspector Renewal Course?

If an Agency Inspector fails an Agency Inspection Renewal Course, they shall not perform any duties authorized by the permit until they successfully complete the applicable Agency Inspector Course.

Agency Inspector Course Lesson Plan

Lesson Two Dynamics of Breath Testing

Purpose

During this lesson, the student will obtain a more in depth understanding of breath alcohol analysis and how to obtain reliable breath alcohol samples.

Resources

Chapter 11D-8, Florida Administrative Code

Objectives

2.1 Define Absorption, Distribution and Elimination as they relate to alcohol.

- Absorption – the process by which alcohol enters the bloodstream.
 - Approximately 25% of a dose of alcohol is absorbed in the stomach and approximately 75% of a dose is absorbed in the small intestines.
- Distribution – the process by which alcohol is spread to all the watery parts of the body via the bloodstream.
- Elimination – the process by which alcohol is removed from the body. It is divided into two categories: metabolism and excretion.
 - Metabolism is the process of breaking down alcohol into carbon dioxide and water in the liver.
 - Approximately 95% of a dose is metabolized by the liver.
 - Alcohol > Acetaldehyde > Acetic Acid > Carbon Dioxide and Water
 - The main enzyme that breaks down alcohol is alcohol dehydrogenase.
 - Excretion is the process of removing alcohol unchanged via the sweat, urine, tears, and breath.
 - Approximately 5% of a dose is excreted unchanged.
 - Alcohol In > Alcohol Out

2.2 Describe how alcohol circulating in the body is excreted unchanged by the lungs.

- The transfer of alcohol and other volatile substances from the blood to the breath occurs in the alveoli of the lungs.
- Alveoli are the thin-walled sacs that fill the lungs and allow for gas and volatile substances to pass from the blood into the lungs and from the lungs into the blood. Blood vessels are in direct contact with the alveoli.
- Alcohol readily passes from the blood into the alveoli by a process called diffusion (automatic movement of a substance from an area of high concentration (blood) to an area of low concentration (lungs)) because alcohol is a low weight molecule and is volatile.

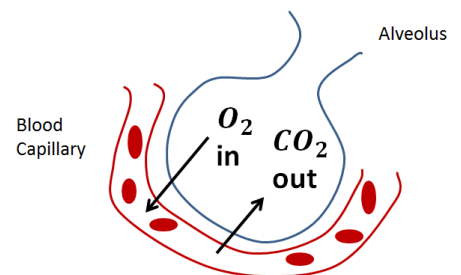


Figure 2.2a Gas exchange between alveoli and blood capillary.

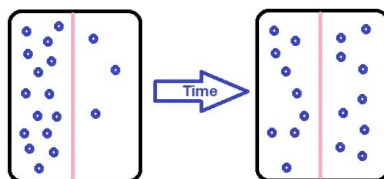


Figure 2.2b Diffusion.

2.3 State deep lung air is the type of breath sample which will render the most accurate breath alcohol level representing the alcohol concentration circulating in the subject's body. Define deep lung air.

- Deep lung air is the breath that is coming from the deepest part of the lungs (near the alveoli) that can be obtained without collapsing the lungs. It can be best obtained by having the subject normally inhale and provide a continuous, sustained breath sample for as long as they possibly can.
- A breath sample obtained from the upper portions of the respiratory tract (mouth, trachea, bronchi) is diluted with room air and will not provide an accurate representation of the alcohol concentration circulating in the subject's body.

2.4 Define and discuss a minimum acceptable breath sample for the Intoxilyzer 9000.

- A minimum acceptable breath sample is defined as a breath sample that has met the minimum criteria of the instrument's analysis to ensure the **BREATH SAMPLE** is reliable.

Intoxilyzer 9000	
Time	The subject must provide a continuous breath sample of sufficient flow for at least one second.
Volume	The subject must provide a continuous breath sample of at least 1.1 liters of breath.
Slope	The subject must provide a breath sample in which the sample concentration consistently rises and then levels off.
• State when PROVIDE SAMPLE NOW is displayed, the subject will have three minutes to provide a minimum acceptable breath sample. • Failure to provide a breath sample into the instrument or to provide a breath sample for less than one second will result in a "NO SAMPLE PROVIDED" message. • Failure to provide a breath sample of at least 1.1 liters into the instrument will result in a "VOLUME NOT MET" message. • Failure to satisfy Slope will result in a "SLOPE NOT MET" message • If PROVIDE SAMPLE NOW is again displayed, the subject is not providing a proper sample to be analyzed. The subject must continue to provide a breath sample until a proper sample is obtained.	

2.5 State the purpose for obtaining a minimum of two samples of breath within fifteen minutes of each other producing results within 0.020 g/210L.

- The result of the second sample confirms the result of the first sample.
- It shows that the two breath samples are as similar as possible to each other.
- It shows that there are no interferents, mouth alcohol, and radio frequency interference affecting the results obtained from the breath samples.

2.6 Define Interferent, Mouth Alcohol and Radio Frequency Interference.

- Interferent – a substance capable of appearing in sufficient non-lethal quantities in the human breath and being detected by the instrument at these non-lethal quantities.
 - Acetone is an example of an interferent. It could possibly appear on the breath of a person who is in diabetic shock or fasting (ketogenesis).
- Mouth Alcohol – residual alcohol that remains in the mouth. It could be present if a person consumes an alcoholic beverage just prior to taking a breath test.
- Radio Frequency Interference (RFI) – radio waves transmitted in proximity to a breath test instrument that can possibly affect the analysis of breath samples if they are in sufficient strength and wavelength. The Intoxilyzer 9000 contains an RFI detector to indicate that RFI is in sufficient strength to affect the instrumentation.

2.7 Define and understand the breath alcohol curve.

- The breath alcohol curve is a graph of the alcohol concentration of a breath sample that occurs over time.

- In order for a breath sample to be reliable, the concentration of the alcohol in the breath sample must rapidly rise and level off in the breath alcohol curve.

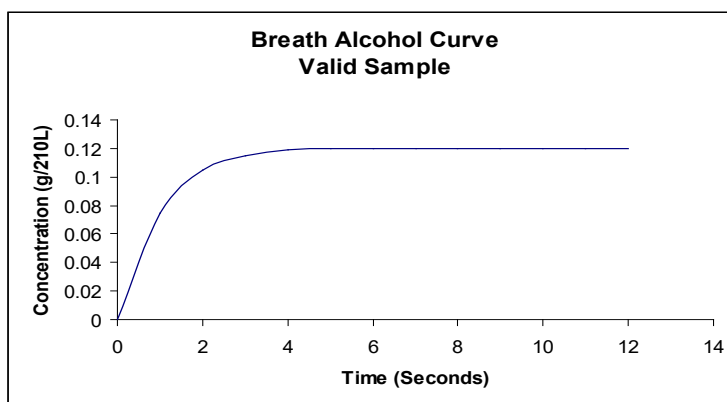


Figure 2.7 Breath alcohol curve of a valid breath sample.

2.8 The student must be able to answer questions regarding a breath test on an Intoxilyzer 9000 with messages that occurred during the breath test - INTERFERENT DETECTED, SLOPE NOT MET, VOLUME NOT MET, and NO SAMPLE PROVIDED.

Scenario One: A breath test with INTERFERENT DETECTED as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of INTERFERENT DETECTED on the first breath sample. The instrument aborted the test. You then restarted the breath test and obtained two valid breath samples.	ANSWER: An interfering substance was detected in the breath or control sample OR the calculated result obtained from the detection of light from each filter did not agree.
QUESTION: Why did you obtain INTERFERENT DETECTED on the first sample?	ANSWER: The two subsequent breath samples are reliable because the instrument did not detect an interfering substance in the breath or control sample OR the instrument did not calculate results from the detection of light from each filter that were different from each other. There was no interferent detected in either subsequent breath sample. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no interferent or problems with the subsequent samples obtained independently of each other.
QUESTION: Are the two breath samples you subsequently obtained reliable?	

Scenario Two: A breath test with SLOPE NOT MET as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of SLOPE NOT MET on the first breath sample. The instrument aborted the test. You then conducted another twenty-minute observation period, restarted the breath test and obtained two valid breath samples.	ANSWER: The sample provided did not meet the slope requirements of a minimum acceptable breath sample.
QUESTION: Why did you obtain SLOPE NOT MET on the first sample?	ANSWER: The two subsequent breath samples are reliable because all minimum acceptable breath sample requirements including slope were met and there was no negative slope associated with either subsequent breath sample. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other.
QUESTION: Are the two breath samples you subsequently obtained reliable?	

Scenario Three: A breath test with OUTSIDE CALIBRATION RANGE.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of OUTSIDE CALIBRATION RANGE on the first and second breath sample. The results on the Affidavit were: Sample #1 – 0.314* Sample #2 – 0.322** *Outside Calibration Range **Outside Calibration Range QUESTION: Why did you obtain OUTSIDE CALIBRATION RANGE on these samples?	ANSWER: The provided samples are outside the instrument's calibration (Department Inspection) range 0.02 - 0.30 g/210L.

Scenario Four: A breath test with VOLUME NOT MET as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of VOLUME NOT MET on the first breath sample. The instrument requested the second and third samples. The second and third samples were valid breath samples. The results on the Affidavit were: Sample #1 – VNM* Sample #2 – 0.112 Sample #3 – 0.115 *Volume Not Met QUESTION: Why did you obtain VOLUME NOT MET on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable?	ANSWER: The breath sample provided did not meet the minimum breath sample requirement of 1.1 liters. ANSWER: The two subsequent breath samples are reliable because all minimum acceptable breath sample requirements including volume were met. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other.

Scenario Five: A breath test with NO SAMPLE PROVIDED as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of NO SAMPLE PROVIDED on the first breath sample. The instrument requested the second and third samples. The second and third samples were valid breath samples. The results on the Affidavit were: Sample #1 – NSP* Sample #2 – 0.112 Sample #3 – 0.115 *No Sample Provided QUESTION: Why did you obtain NO SAMPLE PROVIDED on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable?	ANSWER: The subject did not provide a breath sample into the instrument within the three (3) minute time period allowed for each breath sampling process OR the subject did not provide a breath sample for at least one (1) second. It takes the instrument at least one (1) second to calculate a result therefore a result cannot be obtained if the subject provides a sample for less than one second. ANSWER: The two subsequent breath samples are reliable because the subject provided samples into the instrument and all minimum acceptable breath sample requirements including time were met. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other.

**Agency Inspector Course- Intoxilyzer 9000
Lesson Plan**

**Lesson Two
Dynamics of Breath Testing**

Review Questions

1. Describe how alcohol circulating in the body is excreted unchanged by the lungs.
2. Define deep lung air. How do you obtain deep lung air?
3. What are the minimum acceptable breath sample requirements for the Intoxilyzer 9000?
4. What is the breath alcohol curve? Draw and label the breath alcohol curve.
5. Define Absorption, Distribution and Elimination as they relate to alcohol.
6. What is the purpose of obtaining two breath samples within fifteen minutes of each other that produce results within 0.020 g/210L?

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Two Dynamics of Breath Testing

Review Answers

1. Describe how alcohol circulating in the body is excreted unchanged by the lungs.

- The transfer of alcohol and other volatile substances from the blood to the breath occurs in the alveoli of the lungs. Alveoli are the thin-walled sacs that fill the lungs and allow for gas and volatile substances to pass from the blood into the lungs and from the lungs into the blood. Blood vessels are in direct contact with the alveoli.
- Alcohol readily passes from the blood into the alveoli by a process called diffusion (automatic movement of a substance from an area of high concentration (blood) to an area of low concentration (lungs)) because alcohol is a low weight molecule and is volatile.

2. Define deep lung air. How do you obtain deep lung air?

- Deep lung air is the breath that is coming from the deepest part of the lungs (near the alveoli) that can be obtained without collapsing the lungs. It can be best obtained by having the subject normally inhale and provide a continuous, sustained breath sample for as long as they possibly can.
- A breath sample obtained from the upper portions of the respiratory tract (mouth, trachea, bronchi) is diluted with room air and will not provide an accurate representation of the alcohol concentration circulating in the subject's body.

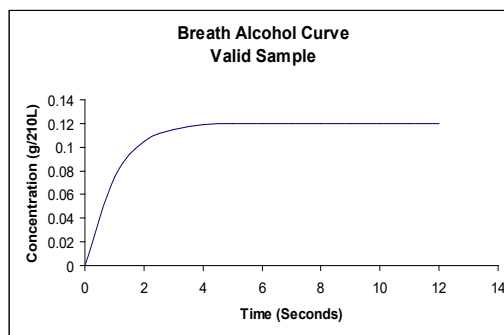
3. What are the minimum acceptable breath sample requirements for the Intoxilyzer 9000?

Time, Volume, and Slope

4. Draw and explain the breath alcohol curve.

The breath alcohol curve is a graph of the alcohol concentration of a breath sample that occurs over time.

In order for a breath sample to be reliable, the concentration of the alcohol in the breath sample must rapidly rise and level off in the breath alcohol curve.



5. Define Absorption, Distribution and Elimination as they relate to alcohol.

- Absorption – the process by which alcohol enters the bloodstream.
- Distribution – the process by which alcohol is spread to all the watery parts of the body via the bloodstream.
- Elimination – the process by which alcohol is removed from the body. It is divided into two categories: metabolism and excretion.

6. What is the purpose of obtaining two breath samples within fifteen minutes of each other that produce results within 0.020 g/210L?

- The result of the second sample confirms the result of the first sample.
- It shows that the two breath samples are as similar as possible to each other.
- It shows that there are no interferences, mouth alcohol, and radio frequency interference affecting the results obtained from the breath samples.

Agency Inspector Intoxilyzer 9000 Course Lesson Plan

Lesson Three Breath Test Instrumentation

Introduction

The student will learn about the instrumentation used to analyze breath samples in accordance with Chapter 11D-8, F.A.C.

Objectives

METHOD OF ANALYSIS

3.1 State the approved method for evidentiary breath testing.

- Infrared light absorption.

3.2 Define and understand what a method is.

- A method is a type of alcohol analysis approved by the Department to conduct chemical or physical tests of blood or breath.
- The Intoxilyzer 9000 uses infrared spectroscopy, also known as infrared light absorption.



Figure 3.2 The CMI, Inc. Intoxilyzer 9000 breath test instrument with and without dry gas cover attached.

3.3 Define and describe infrared light.

- Infrared light is invisible to the human eye
- Infrared light refers to electromagnetic radiation (or energy in the form of waves) in the 0.75 micrometer to 1 millimeter range of the electromagnetic spectrum.

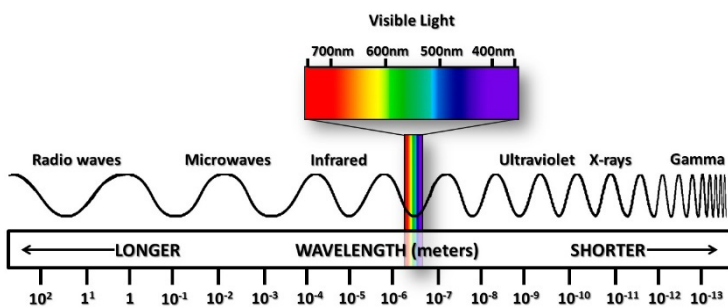


Figure 3.3 Electromagnetic spectrum.

3.4 Define wavelength.

- The distance between one location of a wave of light such as a crest (or peak) and the next corresponding location.
- The wavelengths of light utilized by the Intoxilyzer 9000 fall within the infrared region of the electromagnetic spectrum.

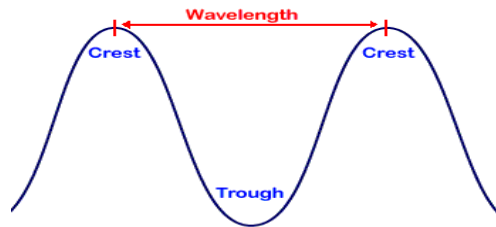


Figure 3.4 Wavelength.

3.5 Explain infrared light absorption as it relates to breath alcohol analysis.

- The Intoxilyzer 9000 uses infrared light to identify and quantify ethanol.
- Alcohol molecules absorb specific wavelengths of infrared light in a unique and consistent manner. This distinct absorbance is its light absorption “fingerprint”.
- The wavelengths of infrared light that are absorbed depend on the different structural groups present on the molecule.
- The amount of infrared light absorbed is directly proportional to the concentration of the alcohol present in the breath. This relationship between the amount of infrared light absorbed and the amount of alcohol in the breath is a constant and will occur in the same proportions every time.
- When infrared light passes through the sample chamber, some of the light may be absorbed and the remainder transmitted through the sample.
- The more alcohol molecules there are in the sample, the more light will be absorbed by these molecules, the less light will reach the detector, and the higher the alcohol result will be.



3.6 State and define the scientific principle used in the Intoxilyzer 9000.

- The Beer-Lambert Law is defined as the linear relationship between the absorbance of infrared light by alcohol and the concentration of alcohol in the sample.
- As the alcohol concentration rises, the more infrared light will be absorbed.
- The absorbance of light by alcohol at a given wavelength is proportional to the absorptivity of the alcohol (e), the sample chamber path length (b), and the concentration of the alcohol (c).
- $A = e \times b \times c$
 - e = molar absorptivity constant (a constant for alcohol)
 - b = sample chamber path length (a constant in the instrumentation)
 - c = concentration of alcohol (can be calculated based on the amount of light absorbed)

3.7 Apply the Beer-Lambert Law to the Agency Inspection and breath testing processes.

- In breath or control testing, the absorbance (A) is measured by the instrument and the concentration (c) is then calculated, giving the breath or control test result.

3.8 State and define another scientific principle that is used in the Intoxilyzer 9000.

- Charles's Law states the volume of a gas or vapor changes with temperature and pressure. A gas or vapor expands by the same fraction of its original volume with each degree that the temperature rises.
- This law explains how a breath or control sample will expand to the entire volume of the sample chamber as long as the pressure and temperature remain constant.

INSTRUMENTATION

3.9 List the approved breath test instrumentation for evidentiary breath testing.

- The approved evidentiary breath test instruments that are currently in use in Florida are the following:
 - CMI, Inc. Intoxilyzer 8000
 - CMI, Inc. Intoxilyzer 9000

3.10 List and describe the major components of the Intoxilyzer 9000 that are used in obtaining and analyzing a breath or control sample.

- **Breath Tube-** delivers breath sample into the instrument. Thermostatically controlled at a nominal temperature of 45°C to prevent condensation of the breath sample
- **Sample Chamber-** where a sample is analyzed. Thermostatically controlled at a nominal temperature of 47°C to prevent condensation of the breath sample
- **Light Source-** produces light. Spiral filament. Emits only infrared light. Directly connected to one end of the sample chamber. Pulses light into sample chamber
- **Filters-** filter infrared light at specific wavelengths. Used to identify alcohol.
- **Detector-** detects the light not absorbed by the alcohol in the sample. Four pyroelectric detectors. Each detector is directly connected to a filter. Determines the amount of light not absorbed by the alcohol in the sample and converts this response into an electrical response.
- **Microprocessor-** calculates the amount of alcohol in a sample based on the electrical response received from the detector.

3.11 Identify and define the hardware of the Intoxilyzer 9000.



Figure 3.11 Intoxilyzer 9000 hardware.

3.12 Identify the major components of the Intoxilyzer 9000.

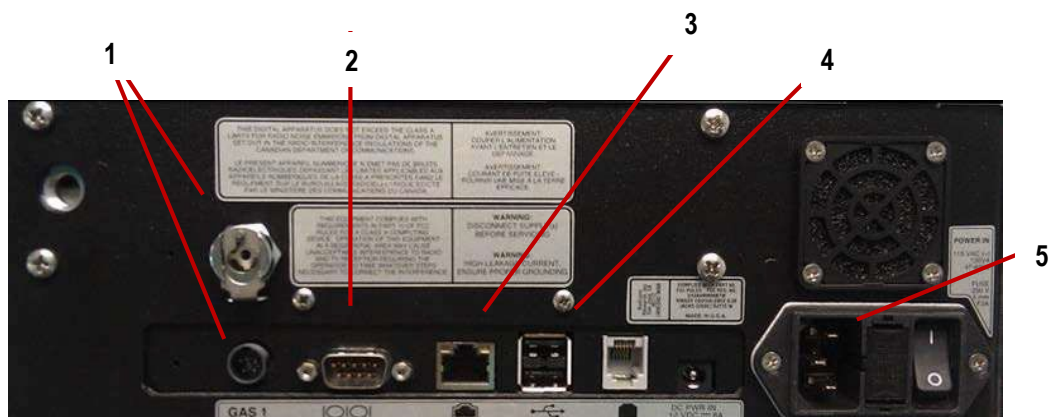


Figure 3.12a Rear image of Intoxilyzer 9000

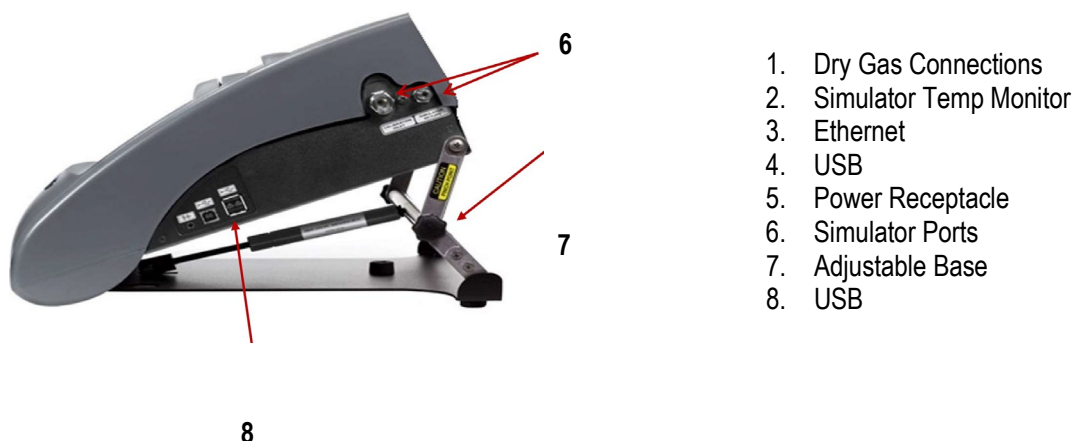


Figure 3.12b Side image of Intoxilyzer 9000

3.13 State the Intoxilyzer 9000 visually communicates by displaying messages and by sounding distinct tones. Describe and understand these tones.

- When a message is displayed, the user is expected to perform the action being requested or take action based on the message displayed.
- The distinct tones are:
 - Beep – sounds after the completion of each operation.
 - Continuous Tone – sounds while a subject blows into the instrument with sufficient pressure.
 - Low/High Tone – sounds in the event of an exception, incorrect operational procedure, or unfulfilled test requirement.

3.14 Describe and understand the different ways to power, initialize warm up, and access READY MODE for the Intoxilyzer 9000.

- The instrument operates via AC (wall outlet) and DC (a car or boat cigarette lighter) power.
- Push the power button on the back of the instrument if the instrument is plugged into a wall outlet. It will take approximately twenty minutes for the instrument to warm up. The instrument will display NOT READY. During the last few minutes of the warm-up phase, the instrument will begin a countdown of the time remaining for warm up to complete. The instrument will conduct diagnostic checks after warming up and before displaying READY.

3.15 List the various Status Modes of the Intoxilyzer 9000.

- **Ready-** The instrument is ready for use. Push the green Start button to begin a breath test.
- **Not Ready-** The instrument is not ready for use.
- **Warm Up-** The instrument's breath tube and sample chamber are heating to operating temperatures. The instrument will be READY in approximately twenty minutes.
- **Busy-** The instrument is performing a function.
- **Standby-** The instrument has not been used for approximately thirty minutes.
 - To bring the instrument to READY, tap the touchscreen. After an approximate two-minute countdown, the instrument will perform diagnostic checks before returning to READY.
- **Disabled-** The instrument cannot be used to conduct breath tests.
 - This means either the Agency Inspector did not complete or upload the Agency Inspection OR a Department Inspection has not been completed.
 - The Dry Gas Standard may also be expired or unattached.

3.16 State when a diagnostic check will occur on an Intoxilyzer 9000:

- Before the instrument comes out of NOT READY.
- At the beginning and end of the breath test sequence, Agency Inspection, and Department Inspection.

3.17 Diagnostic checks performed on the Intoxilyzer 9000:

- RTC – Real Time Clock. Checks for valid date and time. This is not necessarily the correct date and time.
- Analytical – Ensures analytical file is intact and not damaged.
- IRPCM – Infrared Pre-Control Module. Confirms IR source is functioning properly, and IR detector signals are within limits.
- Voltage – Verifies voltage values are within normal limits.
- Current – Verifies current values are within normal limits.
- RAM and NAND Flash – Checks operating system RAM status.
- RFI Output – Verifies output of RFI card to ensure values are within normal limits.
- Temperature Regulation – Verifies the internal temperature sensor and the sample chamber and breath tube heaters are up to temperature and stable.
- Dry Gas Regulator Pressure Sensor Output (if attached) – Checks pressure sensor outputs.

3.18 Explain DIAGNOSTIC OK and the actions the operator must take when a Diagnostic fails.

- When DIAGNOSTIC OK is displayed, the instrument's analytical components and operational standards are working properly. The instrument will enter READY MODE.
- If a diagnostic check fails, the instrument will display DIAGNOSTIC FAIL. The user should address the failure and begin another test or inspection. If the same failure occurs again, contact the Department Inspector.

3.19 Describe and understand how to access and use the Breath Test Operator and Agency Inspector menus of the Intoxilyzer 9000.

- The instrument uses a detachable keyboard, 2D barcode scanner, and LED touchscreen for direct user interface.



Figure 3.19 Onscreen image for keyboard and 2D barcode scanner selections.

- If there is no activity within three minutes after the completion of a function, the instrument will return to the home screen.
- The three-level menu is used to allow features and functions to be changed or initiated. Navigate these menu levels using the OPTIONS button. Enter Operator/Inspector permit number and PIN. Unique PINs are required for all menu levels. The levels are 1 – Breath Test Operator; 2 – Agency Inspector; and 3 – Department Inspector.
- Select OPTIONS. Enter Breath Test Operator permit number and PIN. This will access the Breath Test Operator menu. The Breath Test Operator menu consists of the following:
 - ✓ Reprint Subject Test
 - To reprint a breath test, the operator can enter the subject name, operator last name, test date, or test time. The operator must then scroll through the list and retrieve the record they would like to print. An external printer must be attached. The Form 38a Breath Alcohol Test Affidavit – Intoxilyzer 9000 will automatically print to the external printer.
 - ✓ Cylinder Change
 - After changing the Dry Gas Standard cylinder, the operator must enter the cylinder lot # and expiration date. (Changing the dry gas cylinder lot # during a breath test does NOT update the information stored by the instrument.)
- Select OPTIONS. Enter Agency Inspector permit number and PIN. This will access the Agency Inspector menu. The Agency Inspector menu consists of the following:
 - ✓ Configuration
 - Date/Time Change
 - Cylinder Change

- Used for changing the Dry Gas Standard cylinder and allow input of the cylinder's lot number and expiration date.
- Network Settings
- Connection Settings
- VPN Settings
- ✓ Utility
 - Diagnostics
 - Runs Diagnostic checks and prints results
 - DVMs
 - Shows the pressure remaining in the Dry Gas Standard cylinder
 - Displays temperature of breath tube and sample chamber
 - Print Utilities
 - Printer Test
 - Recall Test
 - Upload
- ✓ Control Testing
 - Stability Tests
 - Agency Inspection

INTOXILYZER 9000 MAINTENANCE

3.20 State and describe the type of maintenance that can be performed on an Intoxilyzer 9000.

- The following maintenance can be performed by a Breath Test Operator:
 - Change the Dry Gas Standard cylinder.
 - Update the Date/Time.
- In addition to the above maintenance, the Agency Inspector can also check:
 - ✓ The power cord for tears, frays, or exposed wiring. Replace if necessary.
 - ✓ The wall outlet for power.
 - ✓ The breath tube for tears and ensure it is warm to the touch.
 - ✓ The keyboard and its connections for damage. The connection should be snug. If damage is found, replace with another keyboard.
 - ✓ The Dry Gas Standard cylinder connections.

3.21 Describe when to replace the Dry Gas Standard cylinder.

- The reasons for changing or removing the Dry Gas Standard cylinder include: (1) the cylinder is below minimum pressure; (2) the cylinder is beyond its expiration date; and (3) shipment of the instrument.
 - Breath Test Operators and Agency Inspectors may change the Dry Gas Standard cylinder.
- The instrument will alert the operator to a low pressure/volume Dry Gas Standard cylinder condition. This alert will occur when the Dry Gas Standard cylinder pressure volume reaches approximately 50 psi (pounds per square inch). This pressure volume is sufficient to allow five more complete breath tests to be conducted. The cylinder must be replaced as soon as possible. No tests can be conducted if the cylinder tank pressure is below 25 psi.
- The cylinder disconnects from the valve assembly by being turned counterclockwise and reconnects by being turned clockwise.
- When seating the cylinder, it must be manually tightened to prevent leaks.
- Once the cylinder is changed, the lot number and expiration date must immediately be updated by accessing the Breath Test Operator or Agency Inspector menu.

**Agency Inspector Course- Intoxilyzer 9000
Lesson Plan**

**Lesson Three
Breath Test Instrumentation**

Review Questions

1. Define method. What is the approved method for evidentiary breath testing?
2. What is infrared light?
3. What is a wavelength?
4. Explain infrared light as it relates to breath alcohol analysis.
5. What is the Beer Lambert Law?
6. What is Charles's Law?
7. What are the approved evidentiary breath test instruments currently in use in Florida?
8. What does DIAGNOSTIC OK mean?
9. What are the three distinct tones the Intoxilyzer 9000 use to communicate with the operator?

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Three Breath Test Instrumentation

Review Answers

1. **Define method. What is the approved method for evidentiary breath testing?**
 - A method is a type of alcohol analysis approved by the Department to conduct chemical or physical tests of blood or breath.
 - The Intoxilyzer 9000 use the method infrared light absorption.
2. **What is infrared light?**
 - Infrared light is not visible to the human eye
 - Electromagnetic radiation or energy in the form of waves, relating to the range of invisible radiation wavelengths from about 0.75 micrometers, just longer than red in the visible spectrum, to 1 millimeter, on the border of the microwave region.
3. **What is a wavelength?**
 - A wavelength is the distance between one peak or crest of a wave of light and the next corresponding peak or crest.
4. **Explain infrared light as it relates to breath alcohol analysis.**
 - Type of absorption methodology that uses the infrared light to identify and quantify alcohol.
 - Alcohol molecules absorb infrared light in a unique and consistent manner.
 - The wavelengths of infrared light that are absorbed depend on the different structural groups present on the molecule.
 - When an alcohol molecule is exposed to infrared light, it will absorb specific wavelengths of the infrared light.
 - The amount of infrared light absorbed is directly proportional to the concentration of the alcohol present in the breath. This relationship between the amount of infrared light absorbed and the amount of alcohol in the breath is a constant and will occur in the same proportions each and every time.
5. **What is the Beer Lambert Law?**
 - The Beer-Lambert Law is defined as the linear relationship between the absorbance of infrared light by alcohol and the concentration of alcohol in the sample.
 - The relationship is linear. As the alcohol concentration rises, the more infrared light will be absorbed.
6. **What is Charles's Law?**
 - The volume of a gas or vapor changes with temperature and pressure. A gas or vapor expands by the same fraction of its original volume with each degree that the temperature rises.
 - This Law explains how a breath or control sample will expand to the entire volume of the sample chamber as long as the pressure and temperature remain constant.
7. **What are the approved evidentiary breath test instruments currently in use in Florida?**

CMI, Inc. Intoxilyzer 8000 and CMI, Inc. Intoxilyzer 9000
8. **What does DIAGNOSTIC OK mean?**

When DIAGNOSTIC OK is displayed, the instrument's analytical components and operational standards are working properly. The instrument will enter READY mode.

9. What are the three distinct tones the Intoxilyzer 9000 use to communicate with the operator?

- Beep – a beep sounds after the completion of each operation.
- Continuous Tone – a continuous tone sounds while a subject blows into the instrument with sufficient pressure.
- Low/High Tone – a low/high tone sounds in the event of an exception, incorrect operational procedure, or unfulfilled test requirement.

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Four Reference Sample Device and Dry Gas Standards

Introduction

During this lesson, the student will learn about the reference sample device and how to properly operate the device. The student will also learn the purpose and use of Dry Gas Standard as they apply to the Agency Inspection process.

Objectives

REFERENCE SAMPLE DEVICE

4.1 Define Reference Sample Device.

- Reference Sample Device – a device, also known as a simulator, that produces a known vapor concentration by the passage of air through a liquid. It is designed to provide a temperature-controlled headspace vapor sample of known concentration.
- The reference sample device is used during an Agency Inspection to conduct the alcohol-free test and the interferent test.
- It must be operated at $34^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$ and have an air leak resistant seal.



Figure 4.1 Guth 12V500 simulator.

4.2 State the temperature of the reference sample device must be maintained at $34^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$.

- The minimum operating temperature is 33.8°C and the maximum operating temperature is 34.2°C .

4.3 State the reference sample device must have an air-leak resistant seal.

- The Agency Inspector must also ensure that the simulator has an air-leak resistant seal. The simulator can be checked for an air-leak resistant seal by performing the following steps:
 - Blow through the intake port of the simulator. The Agency Inspector should notice bubbling.
 - The Agency Inspector should then cover the vapor exit port with their finger and the bubbling should stop.
 - The Agency Inspector should continue blowing after uncovering the vapor exit port to prevent the solution from escaping from the intake port.
 - If leaks are present, the Agency Inspector should take measures to ensure proper seal such as re-positioning the simulator head or changing the simulator o-ring.
 - If proper seal cannot be obtained, the Agency Inspector should not use the simulator.

4.4 State the scientific principle upon which a reference sample device operates as Henry's Law. Define Henry's Law.

- Henry's Law is defined as the concentration in the headspace vapor above a solution is directly proportional to the concentration of that solution at a specific temperature.
- Henry's Law is applied to the reference sample device by the following:
 - The concentration of alcohol in the vapor phase located in the headspace of the simulator will be proportional to the concentration of alcohol in the liquid phase of the simulator at a specific temperature ($34^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$).
 - This partitioning of alcohol between the liquid phase and the vapor phase in the headspace will occur the same each and every time as long as the temperature remains $34^{\circ}\text{C} \pm 0.2^{\circ}\text{C}$.

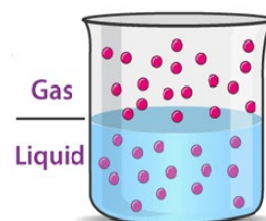


Figure 4.4 Henry's Law depiction

4.5 Describe the proper use of the reference device.

- The Agency Inspector should check the top of the simulator jar for chips and cracks.
- The water or solution is placed into the jar of the reference sample device. Approximately 500 mL of water or solution is required to ensure the simulator does not overheat.
- After placing the water into the simulator, attach the top by screwing it onto the jar. Ensure no cross threading has occurred and an air-leak resistant seal has been obtained.
- Plug the power cord into an electrical outlet. If applicable, turn on the power switch to the simulator.
- After turning the simulator on, observe to ensure the mixing paddle is rotating so that proper distribution of the sample and consistent temperature of the solution is maintained.
- The Agency Inspector must monitor the simulator temperature to ensure that the temperature of 34°C +/- 0.2°C is achieved and maintained.
- After the Agency Inspection is complete, the Agency Inspector must clean and dry the reference sample device and store it in a safe, secure environment.

4.6 Define Dry Gas Standard.

- Dry Gas Standard – a standard consisting of a mixture of alcohol and gas which produces a known alcohol vapor concentration used to verify the calibration of a breath test instrument
 - The analysis of Dry Gas Standard during an Agency Inspection ensures the instrument is properly calibrated and is providing accurate and reliable results.
 - The analysis of Dry Gas Standard during a breath test ensures that the instrument is properly calibrated and is providing accurate and reliable results at the time of each breath test.

4.7 State the requirements that must be met before a Dry Gas Standard may be used.

- Must be obtained from a source approved by the Department.
- Must not be used beyond its expiration date.
- Must maintain the Certificate of Analysis for the lot(s) used for three years.

4.8 Define the Acceptable Range for the 0.05, 0.08, 0.20 g/210L Dry Gas Standards.

- 0.05 g/210L Dry Gas Standard: 0.045 to 0.055 g/210L.
- 0.08 g/210L Dry Gas Standard: 0.075 to 0.085 g/210L.
- 0.20 g/210L Dry Gas Standard: 0.190 to 0.210 g/210L.

**Agency Inspector Course- Intoxilyzer 9000
Lesson Plan**

**Lesson Four
Reference Sample Device and Dry Gas Standards**

Review Questions

1. What is a reference sample device?
2. What is the required operational temperature of a reference sample device?
3. How do you check a reference sample device for an air-leak resistant seal?
4. What is Henry's Law?
5. What is a Dry Gas Standard?
6. What are the three requirements that must be met before a Dry Gas Standard may be used?
7. What are the acceptable ranges for the Dry Gas Standard analyses?

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Four Reference Sample Device and Dry Gas Standards

Review Answers

1. What is a reference sample device?

A device also known as a simulator, that produces a known vapor concentration by the passage of air through a liquid.

2. What is the required operational temperature of a reference sample device?

34°C +/- 0.2°C (33.8°C to 34.2°C)

3. How do you check a reference sample device for an air-leak resistant seal?

- Blow through the intake port of the simulator.
- The Agency Inspector should notice bubbling.
- The Agency Inspector should then cover the vapor exit port with their finger and the bubbling should stop.
- The Agency Inspector should continue blowing after uncovering the vapor exit port to prevent the solution from escaping from the intake port.
- If leaks are present, the Agency Inspector should take measures to ensure proper seal such as re-positioning the simulator head or changing the simulator O-ring.
- If proper seal cannot be obtained, the Agency Inspector should not use the simulator.

4. What is Henry's Law?

- Henry's Law is defined as the concentration in the headspace vapor above a solution is directly proportional to the concentration of that solution at a specific temperature.

5. What is a Dry Gas Standard?

- Dry Gas Standard – a standard consisting of a mixture of alcohol and gas which produces a known alcohol vapor concentration used to verify the calibration of a breath test instrument
 - The analysis of Dry Gas Standard during an Agency Inspection ensures the instrument is properly calibrated and is providing accurate and reliable results.
 - The analysis of Dry Gas Standard during a breath test ensures that the instrument is properly calibrated and is providing accurate and reliable results at the time of each breath test.

6. What are the three requirements that must be met before a Dry Gas Standard may be used?

- Approved source
- Un-expired
- Maintain Certificate of Analysis for each lot used.

7. What are the acceptable ranges for the Dry Gas Standard analyses?

- 0.05 g/210L Dry Gas Standard: 0.045 to 0.055 g/210L.
- 0.08 g/210L Dry Gas Standard: 0.075 to 0.085 g/210L.
- 0.20 g/210L Dry Gas Standard: 0.190 to 0.210 g/210L.

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Five Agency Inspections

Introduction

During this lesson the student will learn the proper way to conduct an Agency Inspection of an Intoxilyzer 9000 in accordance with Chapter 11D-8, Florida Administrative Code.

Resources

Chapter 11D-8, Florida Administrative Code
FDLE/ATP Form 39a Agency Inspection Procedures – Intoxilyzer 9000
FDLE/ATP Form 40a Agency Inspection Report – Intoxilyzer 9000

Objectives

- 5.1 Define Acceptable Range, Accuracy, Acetone Stock Solution, Alcohol, Alcohol Free Test, Authorized Repair Facility, and Mouth Alcohol Solution.**
- Acceptable Range – the results of Dry Gas Standard analyses which fall within the following ranges of alcohol vapor concentration: 0.05 g/210L range is 0.045 to 0.055 g/210L; 0.08 g/210L range is 0.075 to 0.085 g/210L; 0.20 g/210L range is 0.190 to 0.210 g/210L
 - The results of Dry Gas Standard analyses during an Agency Inspection must fall within the acceptable range for that standard.
 - Accuracy – the nearness of a measurement to a known concentration
 - During an Agency Inspection, the Agency Inspector is checking the accuracy and proper operation of the instrument.
 - Acetone Solution – a mixture of acetone and distilled or deionized water provided by the Department.
 - Alcohol – ethyl alcohol, also known as ethanol
 - Ethanol is the alcohol contained in alcoholic beverages.
 - Alcohol Free Test – a result of 0.000 g/210L when using distilled or deionized water.
 - Authorized Repair Facility – the breath test instrument manufacturer, or an entity authorized by the breath test instrument manufacturer to service and repair such breath test instrument.
 - Mouth Alcohol Solution – a mixture of alcohol and distilled or deionized water provided by the Department.
- 5.2 State evidentiary breath test instruments shall be inspected by an Agency Inspector at least once each calendar month. The Agency Inspection shall be conducted in accordance with FDLE/ATP Form 39a Agency Inspection Procedures – Intoxilyzer 9000.**
- When using an Intoxilyzer 9000, the Breath Test Operator must note the date of the Agency Inspection when answering user questions during the administration of the breath test. The Agency Inspector will provide this information to the Breath Test Operator each calendar month.
 - The Agency Inspection date will automatically be recorded by the instrument during the Agency Inspection process. The Agency Inspector should also post the most current Agency Inspection date in a location so the Breath Test Operator can verify this date during a breath test.
- 5.3 State whenever an instrument is taken out of evidentiary use, the agency shall conduct an Agency Inspection. The agency shall also conduct an Agency Inspection prior to returning an instrument to evidentiary use.**

- 5.4 State evidentiary breath test instruments shall only be accessible to a person issued a valid permit by the Department and to persons authorized by a permit holder. This section does not prohibit agencies from sending an instrument to an authorized repair facility.**
- The purpose of this rule is to ensure that an evidentiary breath test instrument is not misused or damaged.
- 5.5 Identify required instrumentation records and retention periods.**
- Agency Inspection Reports and instrument repair records shall be retained by the agency for at least three years from the last entry date.
 - Breath test instrument registrations shall be retained by the agency for at least three years after an instrument is removed from evidentiary use.
 - Dry Gas Standards certificates of analysis shall be retained by the agency for at least three years after receipt.
 - All breath tests conducted on Intoxilyzer 9000 evidentiary instruments shall be electronically transmitted to the Department at least once each calendar month.

AGENCY INSPECTION OF THE INTOXILYZER 9000

- 5.6 State the equipment needed to conduct an Agency Inspection.**
- Copy of FDLE/ATP Form 39a Agency Inspection Procedures- Intoxilyzer 9000
 - CMI, Inc. Intoxilyzer 9000
 - External Printer
 - Distilled/deionized water
 - Class A 3ml pipette
 - Mouthpieces
 - Mouth Alcohol Solution
 - Acetone Stock Solution
 - Dry Gas Standards (0.05, 0.08, 0.20 g/210L)
 - Simulator (at least one)
 - ¼ inch Tygon tubing (depending on simulator type)
- 5.7 An Agency Inspection of an Intoxilyzer 9000 must be conducted in accordance with FDLE/ATP Form 39a Agency Inspection Procedures – Intoxilyzer 9000 and the results recorded on FDLE/ATP Form 40a Agency Inspection Report – Intoxilyzer 9000.**
- The Agency Inspector must never disassemble an Intoxilyzer 9000.
 - The Dry Gas Standard cylinder used must not contain less than 50 psi of pressure. Replace if the cylinder is below this pressure. The instrument will also inform the Agency Inspector if there is insufficient pressure to conduct an Agency Inspection.
 - The Agency Inspector must verify the Dry Gas Standards being used are from an approved source and un-expired.
 - Simulators are connected to the calibration inlet via a quick connect.
 - The simulator return port is only used for vapor return to a simulator. It is not used with a Dry Gas Standard cylinder.
- 5.8 Describe and explain each step of FDLE/ATP Form 39a, Agency Inspection Procedures – Intoxilyzer 9000.**
- The Intoxilyzer 9000 has the Agency Inspection sequence automatically programmed to follow FDLE/ATP Form 39a Agency Inspection Procedures – Intoxilyzer 9000.
- 5.9 Describe the proper completion of FDLE/ATP Form 40a – Agency Inspection Report – Intoxilyzer 9000.**
- FDLE/ATP Form 40a Agency Inspection Report – Intoxilyzer 9000 must be printed when the inspection is complete. The instrument must be connected to an external printer.
 - After the inspection is complete and the report is printed, but before the upload is conducted, the Agency Inspector must carefully review the printed Agency Inspection Report for accuracy and completeness.

- The Agency Inspector is required by Chapter 11D-8, F.A.C., to make the Agency Inspection and breath test results electronically available to the Department at least once per calendar month.
- After the completion of an Agency Inspection, the instrument must be uploaded within five calendar days. This requirement is satisfied by using the Upload function in the level 2 menu.
- Note: If the Agency Inspection is not uploaded at the time of inspection, the instrument will scroll the remaining days left to upload. If the Agency Inspection is not uploaded within the remaining time, the instrument will enter Disabled Mode and will not allow breath tests to be conducted until the instrument is uploaded.

5.11 Define the exception messages and understand the action that must be taken when each message is displayed and printed. Describe how to document all occurrences on the Agency Inspection report.

- An incorrect operational procedure or condition will cause the instrument to display and print an exception message associated with the incorrect operational procedure or subnormal condition.

Message	Description	Action
INTERFERENT DETECTED	An interfering substance was detected in the breath or control sample OR the calculated result obtained from the detection of light from each filter did not agree. The instrument will display INTERFERENT DETECTED, abort the test, print INT* in the results section of the report, and print *INTERFERENT DETECTED at the bottom of the results section of the report.	AGENCY INSPECTION: This is the appropriate response for the Interferent Test. If this response is obtained during other tests, restart the affected test. BREATH TEST: Restart the breath test. If INTERFERENT DETECTED is again obtained, the subject may need medical attention.
IMPROPER SAMPLE	The sample was introduced at the wrong time. The instrument will display IMPROPER SAMPLE, abort the test, print IPS* in the results section of the report, and print *IMPROPER SAMPLE at the bottom of the results section of the report.	AGENCY INSPECTION: Restart the affected procedure of the Agency Inspection and ensure the sample is delivered at the appropriate time. BREATH TEST: Restart the breath test and ensure that the subject provides a breath sample only when the instrument displays PROVIDE SAMPLE NOW.
AMBIENT FAIL	The instrument was unable to obtain an air sample sufficiently clear of alcohol. The instrument will display AMBIENT FAIL, abort the test, print AMB* in the results section of the report, and print *AMBIENT FAIL at the bottom of the results section of the report.	AGENCY INSPECTION: Clear/ventilate the immediate area of possible contaminants and restart the affected procedure of the Agency Inspection. BREATH TEST: The operator must clear the immediate area of possible contaminants and restart the breath test. If AMBIENT FAIL is again obtained, contact the Department Inspector for further information.
PURGE FAIL	During the air blank after a breath or control sample, the instrument was not able to sufficiently clear the sample chamber of a breath or control test sample. The instrument will display PURGE FAIL, abort the test, print PUR* in the results section of the report, and print *PURGE FAIL at the bottom of the results section of the report.	AGENCY INSPECTION: Clear/ventilate the immediate area of possible contaminants and restart the affected procedure of the Agency Inspection. BREATH TEST: The operator must clear the immediate area of possible contaminants and restart the breath test. If PURGE FAIL is again

		obtained, contact the Department Inspector for further information.
SUBJECT TEST REFUSED	The operator double tapped the “Refused” button when the instrument displayed PROVIDE SAMPLE NOW. The instrument will display SUBJECT TEST REFUSED, abort the test, print REF* in the results section of the report, and print *SUBJECT TEST REFUSED at the bottom of the results section of the report.	BREATH TEST: A law enforcement officer or correctional officer must complete the applicable refusal affidavit.
NO SAMPLE PROVIDED	The subject did not provide a breath sample into the instrument within the three-minute time period allowed for each breath sampling process OR the subject did not provide a breath sample for at least one second. The instrument will display NO SAMPLE PROVIDED, print NSP* in the results section of the report, and print *NO SAMPLE PROVIDED at the bottom of the results section of the report.	BREATH TEST: • If NO SAMPLE PROVIDED is obtained on the first breath sample, the instrument will continue to request two more samples. If the subsequent samples are valid, the breath test is complete. • If NO SAMPLE PROVIDED is obtained on the second breath sample, the instrument will continue to request a third breath sample. If the first and third breath samples are valid, the breath test is complete. • If NO SAMPLE PROVIDED is obtained on the first and second breath samples, the instrument will discontinue the breath test. • If the subject is not going to provide samples, the breath test is complete.
SLOPE NOT MET	The sample provided did not meet the slope requirements of a minimum acceptable breath sample. The instrument will display SLOPE NOT MET, abort the test, print SNM* in the results section of the report, and print *SLOPE NOT MET at the bottom of the results section of the report.	AGENCY INSPECTION: This is the appropriate response for the Mouth Alcohol Test. If this response is obtained during other tests, restart the affected portion of the Agency Inspection. BREATH TEST: Perform another twenty-minute observation period and restart the test.
RFI DETECT	The instrument detected radio frequency interference of a sufficient strength and frequency to interfere with the breath test or control test. The instrument will display RFI DETECT, abort the test, print RFI* in the results section of the report, and print *RFI DETECT at the bottom of the results section of the report.	AGENCY INSPECTION and BREATH TEST: Clear the room and immediate area of any radio frequency interference (such as radios or cell phones) and restart the affected procedure of the Agency Inspection or the breath test.
SEQUENCE ABORTED	The operator double tapped the “Abort” button during an operational function. The instrument will display SEQUENCE ABORTED, abort the test, print ABT* in the results section of the report, and print *SEQUENCE ABORTED at the bottom of the results section of the report.	AGENCY INSPECTION: Restart the entire Agency Inspection. Maintain the results of the first Agency Inspection and document occurrence. BREATH TEST: Restart the breath test (if this action was accidental).

OUTSIDE CALIBRATION RANGE	The value of the provided breath sample was outside the instrument calibration range (0.020 - 0.300 g/210L). The instrument will display OUTSIDE CALIBRATION RANGE, print the result (X.XXX*), and print *OUTSIDE CALIBRATION RANGE at the bottom of the results section of the report.	BREATH TEST: If OUTSIDE CALIBRATION RANGE is obtained and the result is above 0.300g/210L, the subject may need medical attention.
CONTROL OUTSIDE TOLERANCE	The Dry Gas Standard control test value(s) were out of range On the breath test, the instrument will display CONTROL OUTSIDE TOLERANCE, abort the test, print * by the control test result in the results section of the report, and print *CONTROL OUTSIDE TOLERANCE at the bottom of the results section of the report.	AGENCY INSPECTION: Check that the Dry Gas Standard cylinder is attached and plugged in, check the O-rings and restart the affected procedure of the Agency Inspection. BREATH TEST: Ensure the Dry Gas Standard is connected to the instrument. Additional Recommendations: Remove the subject from the testing area and allow the area to “air out” before beginning another test. Keep the subject away from the breath tube when samples are not being obtained. If CONTROL OUTSIDE TOLERANCE is again obtained, the operator should contact their Department Inspector for further instructions.
DIAGNOSTIC FAIL	One or more of the diagnostic tests failed. The instrument will display DIAGNOSTIC FAIL, abort the test, print FAIL* in the results section of the report and print *DIAGNOSTIC FAIL at the bottom of the results section of the report.	AGENCY INSPECTION: Restart the instrument or Agency Inspection. If DIAGNOSTIC FAIL for the same failure is again obtained, contact the Department Inspector. BREATH TEST: Restart the instrument or test. If DIAGNOSTIC FAIL for the same failure is again obtained, contact the Department Inspector.
VOLUME NOT MET	The breath sample provided did not meet the minimum breath sample requirement of 1.1 liters. The instrument will display VOLUME NOT MET, print VNM* in the results section of the report, and print *VOLUME NOT MET at the bottom of the results section of the report.	BREATH TEST: • If VOLUME NOT MET is obtained on the first breath sample, the instrument will continue to request two more samples. If the subsequent samples are valid, the breath test is complete. • If VOLUME NOT MET is obtained on the second breath sample, the instrument will continue to request a third breath sample. If the first and third breath samples are valid, the breath test is complete. • If VOLUME NOT MET is obtained on the first and second breath samples, the instrument will discontinue the breath test.

NO .020 AGREEMENT	There was not 0.020 g/210L agreement between any two of the three samples of breath obtained. The instrument will display NO .020 AGREEMENT, print * by the breath sample results, and print *NO .020 AGREEMENT at the bottom of the results section of the report.	BREATH TEST: Restart the breath test.
TANK BELOW MIN	The gas pressure of the Dry Gas Standard cylinder is under 25 psi. The instrument cannot be used until the Dry Gas Standard cylinder is changed.	The operator or Agency Inspector will need to change the Dry Gas Standard cylinder and record the new lot number and expiration date. An Agency Inspection or breath test can then be conducted.

**Agency Inspector Course- Intoxilyzer 9000
Lesson Plan**

**Lesson Five
Agency Inspections**

Review Questions

1. What are the acceptable ranges for the following Dry Gas Standards: 0.05 g/210L, 0.08 g/210L, and 0.20 g/210L?
2. What is acetone solution?
3. What is mouth alcohol solution?
4. What procedures must be followed when conducting an Agency Inspection of an Intoxilyzer 9000?
5. True or False. Whenever an instrument is taken out of evidentiary use and prior to returning an instrument to evidentiary use, the Agency Inspector must perform an Agency Inspection.
6. True or False. A Department Inspection must be conducted subsequent to repair.

**Agency Inspector Course- Intoxilyzer 9000
Lesson Plan**

**Lesson Five
Agency Inspections**

Review Answers

1. **What are the acceptable ranges for the following Dry Gas Standard: 0.05 g/210L, 0.08 g/210L, and 0.20 g/210L?**
0.05 g/210L – 0.045 to 0.055 g/210L
0.08 g/210L – 0.075 to 0.085 g/210L
0.20 g/210L – 0.190 to 0.210 g/210L
2. **What is acetone solution?**
A mixture of acetone and distilled or deionized water. It is used to conduct the Interferent Test on the Intoxilyzer 9000.
3. **What is mouth alcohol solution?**
A mixture of alcohol and distilled or deionized water provided by the Department. It is used to conduct the Mouth Alcohol Test.
4. **What procedures must be followed when conducting an Agency Inspection of an Intoxilyzer 9000?**
FDLE/ATP Form 39a Agency Inspection Procedures – Intoxilyzer 9000
5. **True or False. Whenever an instrument is taken out of evidentiary use and prior to returning an instrument to evidentiary use, the Agency Inspector must perform an Agency Inspection.**
True
6. **True or False. A Department Inspection must be conducted subsequent to repair.**
True

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan
--

Lesson Six Laboratory Practical
--

Requirements for Laboratory Practical
--

Requirements for the Intoxilyzer 9000:

- The student must complete at least one demonstration of an Agency Inspection with the instructor.
- The student must complete at least one independent Agency Inspection on an Intoxilyzer 9000 (these independent Agency Inspections are in addition to the proficiency Agency Inspection)
- The student must properly complete the required paperwork associated with the independent Agency Inspection. The paperwork includes the following: FDLE/ATP Form 40a Agency Inspection Report – Intoxilyzer 9000

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Seven Courtroom Testimony

Introduction

During this lesson the student will learn how to testify regarding the Agency Inspection that was conducted and, through answering questions sometimes asked in court, will review all information learned in this course.

Objectives

7.1 When testifying in court, the Agency Inspector should be well prepared and ready to answer questions regarding the breath test.

Before going to Court:

- Review course material in conducting the Agency Inspection (for example, instrument theory, instrument operation and the rules of conducting an Agency Inspection).
- Understand why you conduct Agency Inspections of evidentiary breath test instruments (for example, to ensure the accuracy and reliability and proper operation of the evidentiary breath test instrument).
- Review your Agency Inspections to re-familiarize yourself with the occurrences of the Agency Inspections.

Testifying in Court:

- Dress professionally – uniform or business attire.
- Speak loudly and clearly.
- Emphasize your training, education and experience.
- Speak in simple language when possible. Breath testing contains complex scientific language but try to keep it simple and use analogies when possible.
- Do not be afraid to say “I don’t know” when you do not know the answer.
- Do not argue with either the prosecutor or the defense counsel.
- Listen carefully to the question and answer only the question asked.
- Take your time when answering a question. If necessary, think about your answer before giving it.
- If possible, use visual aids or demonstrations when testifying.

7.2 The Agency Inspector should be familiar with answering questions asked in court regarding the Agency Inspection.

- The class will be broken down into small groups. Using an Agency Inspection from the practical conducted earlier, students will take turns asking and answering the following questions below:

Getting “qualified” as an Agency Inspector:

- Please state your name.
- Where are you employed?
- How long have you been employed with that agency?
- What are your duties and responsibilities?
- Do you have any education or experience in conducting Agency Inspections?
- Did you learn how to conduct Agency Inspections in accordance with Chapter 11D-8, F.A.C.?
- Do you hold a permit to conduct Agency Inspections?
- When did you obtain it?
- How many Agency Inspections have you conducted?
- What are your duties as an Agency Inspector?

The Agency Inspection:

- Are you familiar with Intoxilyzer 9000 Serial Number _____?
- Where is this instrument kept?
- Is this instrument kept in a clean, dry and secure area?
- Who has access to this instrument?
- Is this instrument approved by FDLE?
- Does this instrument use infrared light absorption?
- What is infrared light absorption?
- Is this instrument registered by FDLE to conduct evidentiary breath testing?

Admission of the Agency Inspection:

- Do you recognize this document?
- How do you recognize it?
- What is this document?
- Did you complete the document at or near the time of the Agency Inspection?
- What is an Agency Inspection?
- Why do you conduct Agency Inspections?
- What tests are performed when conducting an Agency Inspection?

(Inspection must be admitted into evidence)

- What were the results of the Agency Inspection?
- Was this instrument operating correctly and in proper calibration as indicated by your Agency Inspection?

7.3 The student must be able to answer questions regarding an Agency Inspection and what occurred during the inspection process.

- The students will be brought back into one group again. The following scenarios will be discussed as a class:

Scenario One: An Agency Inspection with CONTROL OUTSIDE TOLERANCE on the Dry Gas Standard Results.	
QUESTION	SAMPLE ANSWER
When conducting this Agency Inspection, you received CONTROL OUTSIDE TOLERANCE results for the 0.05 g/210L Dry Gas Standard analysis. Results: 0.000, 0.000, 0.000 The instrument required you to repeat these tests. You repeated the analysis of the 0.05 g/210L test, and all results were within acceptable range. QUESTION 1: Why did you obtain CONTROL OUTSIDE TOLERANCE readings on your 0.05 g/210L Dry Gas Standard Test? QUESTION 2: What did you do to address the CONTROL OUTSIDE TOLERANCE readings? QUESTION 3: So you just keep testing until you get the right answer? QUESTION 4: How do you know the instrument is operating correctly?	ANSWER 1: The Dry Gas Standard cylinder was not connected to the instrument. ANSWER 2: I attached the cylinder to the instrument and repeated the tests. ANSWER 3: No, I addressed the problem and repeated the test. If CONTROL OUTSIDE TOLERANCE results were obtained on the repeat analysis, I would mark this inspection as DOES NOT COMPLY and remove the instrument from evidentiary use. ANSWER 4: On the repeat analysis, after addressing the problem, which was not the instrument, the results were within acceptable range and the instrument is operating correctly.

Scenario Two: An Agency Inspection with INTERFERENT DETECTED not resulting during the Interferent Test	
QUESTION	SAMPLE ANSWER

When conducting this Agency Inspection, you did not obtain INTERFERENT DETECTED on your Interferent Test. Results: 0.000, 0.000, 0.000 The instrument required you to repeat these tests. You repeated the interferent test and all results were within acceptable range. QUESTION 1: Why was the acetone not detected? QUESTION 2: What did you do to address this? QUESTION 3: So the instrument really isn't operating correctly? QUESTION 4: How do you know that the instrument is operating correctly?	ANSWER 1: The bottle of acetone stock solution that was used was almost depleted. It may have not contained the correct amount of acetone for the instrument to detect. ANSWER 2: I obtained a fresh bottle of acetone stock solution and prepared a new simulator for the interferent test. I allowed the simulator to warm up properly and repeated the test. ANSWER 3: No. I address the problem and repeat the tests. If incorrect results were obtained on the repeat analysis, I would mark this inspection as DOES NOT COMPLY, remove the instrument from evidentiary use, and notify a Department Inspector. ANSWER 4: On the repeat analysis, after addressing the problem, which was not the instrument, the results were within acceptable range and the instrument was operating correctly.
---	---

Agency Inspector Course- Intoxilyzer 9000 Lesson Plan

Lesson Eight Proficiency and Written Examination

Proficiency

- As outlined in Chapter 11D-8, Florida Administrative Code, each student must successfully demonstrate proficiency in conducting an Agency Inspection.
- These requirements include:
 - The proper inspection of an approved breath test instrument in accordance with FDLE/ATP Form 39a Agency Inspection Procedures – Intoxilyzer 9000
 - Proper completion of all required forms (FDLE/ATP Form 40a Agency Inspection Report – Intoxilyzer 9000)
 - Properly performing a breath test in accordance with FDLE/ATP Form 37a Operational Procedures – Intoxilyzer 9000
 - Proper completion of FDLE/ATP Form 38a – Breath Alcohol Test Affidavit

Written Examination

- Each student must take a written examination.
- Successful completion of the written examination requires a passing grade of 80% or better.