

# ANHYDROUS AMMONIA QUIZ

Company Name \_\_\_\_\_

City, ST \_\_\_\_\_

Date \_\_\_\_\_

Print Name \_\_\_\_\_

Signature \_\_\_\_\_

- Which elements are contained in anhydrous ammonia?
  - Hydrogen and water
  - Water and nitrogen
  - Hydrogen and nitrogen
  - Oxygen and Hydrogen
- Which is the correct chemical formula for anhydrous ammonia?
  - H<sub>2</sub>O
  - NH<sub>3</sub>
  - CO<sub>2</sub>
  - H<sub>2</sub>SO<sub>4</sub>
- At atmospheric temperature and pressure anhydrous ammonia is which of the following?
  - Liquid
  - Gas
  - Ice
  - Solid
- Is anhydrous ammonia flammable?
  - Yes, at concentrations between approximately 15.5% and 27% in air
  - No, anhydrous ammonia is not flammable at any concentration in air
- When considering the effects of anhydrous ammonia on the human body, we class it as:
  - A poison
  - An antiseptic
  - A powerful corrosive
  - A good cleaner
- In the event of an anhydrous ammonia leak involves a contaminated person, what general steps should be followed?
  - Remove them from the affected area
  - Decontaminate them (and yourself, if necessary)
  - Administer first aid
  - Seek medical help as soon as possible
  - All of the above

7. The best protection against exposure to anhydrous ammonia when you are handling it is:
- A. Plenty of water
  - B. Well maintained equipment
  - C. Personal protective equipment
  - D. Regular inspections
  - E. Proper training and rule enforcement
  - F. All of the above
8. What is the proper procedure if anhydrous ammonia, even a small amount, gets into your eyes?
- A. Put an oily solution in the eyes immediately
  - B. Holding the lids open, continuously flush the eyes with water. Continue flushing for at least 15 minutes before leaving the water source, then seek medical attention
  - C. Hold the eyes shut and seek medical attention
  - D. There really isn't much you can do
9. Which items of personal protective equipment must be available for anhydrous ammonia operations?
- A. Goggles - chemical, tight fitting
  - B. Gloves - anhydrous ammonia type
  - C. Rubber boots
  - D. 100 gallon stock tank filled with clean water
  - E. All of the above
10. When inspecting an anhydrous hose, it is important to know which of the following:  
(select all that apply)
- A. Most hose is built to last forever
  - B. All hose used for anhydrous ammonia has the date it was manufactured stamped on it
  - C. Anhydrous ammonia hose has a recommended life
11. If you know a hose has been stretched you should:
- A. Replace it immediately
  - B. Cool the hose with water to shrink it
  - C. Run your hand over it to check for leaks
12. What do you look for when inspecting a hose?
- A. If the recommended hose life is exceeded
  - B. If there are soft spots
  - C. If there cuts or cracks
  - D. All of the above
13. A farmer brings his nurse tank to be filled with anhydrous ammonia. After inspecting the tank you find several decals missing and an out of date "pop off". What should you do?  
(select all that apply)
- A. Fill the tank
  - B. Fix the deficiencies and then fill the tank
  - C. Refuse to fill the tank

14. "1005 Non-Flammable Gas" placards must be located where on all nurse tanks in anhydrous ammonia operations? (select all that apply)
- A. Both sides
  - B. Both sides and rear, if front loading tank
  - C. Both sides, front and rear
  - D. Front and rear
15. Before starting to fill a nurse tank, what is the first thing you should do?
- A. Call the safety department
  - B. Take a soil sample
  - C. Put on your goggles and gloves
  - D. Make sure the weather is clear
16. What should you always remember to stand clear of when filling a nurse tank?
- A. The tank itself
  - B. Valve and hose ends
  - C. Railroad tracks
  - D. Electrical fixtures
17. Before loading a nurse tank, what should always be done to the wheels?
- A. Grease them
  - B. Chock them
  - C. Inflate the tires to 40 psi
  - D. Jack them up to check they turn evenly
18. You should never handle a hose by:
- A. The middle
  - B. The cover
  - C. The valve wheel
19. Valves should be marked so you know if they are?
- A. Liquid or vapor
  - B. Intake or discharge
  - C. High or low pressure
  - D. None of the above
20. Which of the following tanks is ready to be filled?
- A. A tank with no signs
  - B. A tank with out of date pressure relief valve
  - C. A tank with a faulty liquid level gauge
  - D. A tank with a leaky valve
  - E. None of the above

21. Gaskets must be replaced immediately when they are:
- A. The wrong color
  - B. Worn or damaged
  - C. One week old
  - D. Dirty
22. What is the proper action if the fill hoses are too short to reach the nurse tank?
- A. Stretch the hose to make it reach
  - B. Move the nurse tank closer to the riser
  - C. Connect only one fill hose
  - D. Connect two hoses together to reach the nurse tank
23. How should connections be tightened?
- A. With a spanner wrench
  - B. With a crescent wrench
  - C. With an end wrench
  - D. Tighten connection by hand - never use a wrench
24. Why is it important to perform a walk-around inspection of a nurse tank before use?
- A. To help prevent accidents that could endanger you and others
  - B. To identify repairs that can be made before leaving the bulk plant
  - C. It is part of the operator's responsibility
  - D. It is a fundamental safety practice
  - E. All of the above
25. Which personal protective equipment is necessary when the nurse tank leaves the plant?
- A. Safety goggles - indirect, vented, chemical
  - B. A five gallon container of fresh water
  - C. Rubber gloves - anhydrous ammonia type
  - D. All of the above
26. Which of the following products are stamped by the manufacturer with a replacement date?  
(select all that apply)
- A. "Pop Off" valve
  - B. Water tanks
  - C. NH<sub>3</sub> hoses
  - D. Bleeder valves
27. When a white fog (liquid ammonia) escapes from the fixed liquid level gauge the nurse tank is:
- A. Filled to overflowing
  - B. Ready to explode
  - C. Filled to the 85% level
  - D. Ready to be filled

28. After closing the liquid and vapor valves on both the nurse tank and the riser, what should you do before disconnecting the hoses?
- A. Bleed only the vapor line connections, then slowly open and close the liquid valve
  - B. Bleed only the liquid line connections, then slowly open and close the vapor valve
  - C. Bleed both the liquid and vapor line connections between the nurse tank and riser to relieve pressure before disconnecting the hoses
  - D. Open the pressure relief valves on the riser
29. What is the proper placement of hoses on nurse tanks for highway transport?
- A. Connected to the liquid withdrawal valve
  - B. Connected to the vapor valve
  - C. Attached to the acme parking plug
30. What is the proper way to remove a kink from a hose?
- A. Snap the hose with a quick wrist motion to remove the kink
  - B. Strike the hose with a soft mallet
  - C. Leave it alone and let the pressure straighten it out
  - D. Step over the hose and twist both your body and the hose in the direction of the kink while keeping the valve pointed away from your body
31. A nurse tank should not be taken on the highway unless it is:
- A. Connected to the towing vehicle by two chains crossed under the tongue
  - B. Tires are in good condition and properly inflated
  - C. Connected securely to the towing vehicle with an approved hitch pin
  - D. All of the above
32. When towing a nurse tank with a SMV sign, the top speed is limited to:
- A. 25 mph or tire speed rating whichever is lower
  - B. 30 mph or tire speed rating whichever is lower
  - C. 45 mph
  - D. 55 mph when the tank is empty
33. Pressure relief valves are designed to:
- A. Make the busy fertilizer season more manageable
  - B. Control the flow of liquid in the liquid line
  - C. Bleed pressure from hose-end valves
  - D. Prevent excess pressure from building up in storage tanks
34. What is the purpose of wearing personal protective equipment?
- A. It is required by law
  - B. To protect yourself and others
  - C. It is a fundamental safety practice.
  - D. All of the above

35. Protective equipment is only effective if it is:
- A. Required by the state
  - B. Worn during all anhydrous ammonia operations
  - C. Kept in the truck
  - D. Issued to you personally
36. Which of the following safety features are required at an anhydrous ammonia facility?
- A. Protection of exposed piping from vehicle damage
  - B. A sign displayed in a conspicuous place displaying the name, address, phone number of nearest, representative agent or owner of the storage system
  - C. 100 gallons of clean water in an open top container or easily accessible deluge shower
  - D. A mean of locking all vapor and liquid valves when the facility is unattended
  - E. All of the above
37. Compressor pumps transfer anhydrous ammonia by:
- A. Sucking the liquid from one tank to another
  - B. Removing vapor from the tank being filled and pushing the vapor into the tank being emptied
  - C. Free flowing from the tank being emptied
  - D. All of the above
38. Liquid anhydrous ammonia pumps:
- A. Work like compressors
  - B. Pump vapor
  - C. Pump liquid and allow the vapor to flow freely between tanks
  - D. Do not work well with by-pass lines
39. Because anhydrous ammonia is highly corrosive, valves, fittings and piping must be constructed of what type of material?
- A. Copper
  - B. Steel
  - C. Brass
  - D. Nylon
40. Valves that allow anhydrous ammonia to flow in only one direction are:
- A. Back check valves
  - B. Pressure relief valves
  - C. Excess flow valves
  - D. Hydrostatic relief valves
41. At what concentration of anhydrous ammonia is a canister mask good for?
- A. Less than 300 PPM
  - B. 300 PPM or greater

42. Either "Caution Ammonia" or "Anhydrous Ammonia" is accepted nurse tank signage.
- A. True
  - B. False
43. The "Inhalation Hazard" sign is required on two sides of a nurse tank and storage tank.
- A. True
  - B. False
44. Double nurse tanks on a single trailer are treated as one nurse tank for signage purposes.
- A. True
  - B. False
45. The owner's name, phone number and nurse tank identification number can be on the scale ticket only to meet requirements.
- A. True
  - B. False
46. Manufacturer's name plates are required, but do not need to be readable on nurse tanks.
- A. True
  - B. False
47. Long term health problems are usually related to eye and respiratory tract injuries associated with anhydrous ammonia.
- A. True
  - B. False
48. Anhydrous means "with water"?
- A. True
  - B. False
49. In case of an anhydrous ammonia leak, what is your first concern?
- A. Make sure no one is in immediate danger
  - B. Drive to the nearest state police barracks
  - C. Call the loss control department
  - D. Notify customers that delivery will be later
50. When should you report an anhydrous ammonia incident to the Oklahoma Department of Agriculture, Food and Forestry?
- A. Never
  - B. No later than 24 hours after the accident
  - C. Up to one week after the incident
  - D. Immediately

# ANSWER KEY

1. Which elements are contained in anhydrous ammonia?  
C. Hydrogen and nitrogen
2. Which is the correct chemical formula for anhydrous ammonia?  
B.  $\text{NH}_3$
3. At atmospheric temperature and pressure anhydrous ammonia is which of the following?  
B. Gas
4. Is anhydrous ammonia flammable?  
A. Yes, at concentrations between approximately 15.5% and 27% in air
5. When considering the effects of anhydrous ammonia on the human body, we class it as:  
C. A powerful corrosive
6. In the event of an anhydrous ammonia leak involves a contaminated person, what general steps should be followed?  
E. All of the above - remove from affected area, decontaminate, administer first aid, seek medical help
7. What is the best protection against exposure to anhydrous ammonia when you are handling it is:  
F. All of the above - plenty of water, well maintained equipment, PPE, regular inspections, proper training and rule enforcement
8. What is the proper procedure if anhydrous ammonia, even a small amount, gets into your eyes?  
B. Holding the lids open, continuously flush the eyes with water. Continue flushing for at least 15 minutes before leaving the water source, then seek medical attention
9. Which items of personal protective equipment must be available for anhydrous ammonia operations?  
E. All of the above - chemical, tight fitting goggles,  $\text{NH}_3$  type gloves, rubber boots and 100 gallon stock tank filled with clean water
10. When inspecting an anhydrous hose, it is important to know which of the following:  
(select all that apply)  
B. All hose used for anhydrous ammonia has the date it was manufactured stamped on it  
C. Anhydrous ammonia hose has a recommended life
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(select all that apply)
- B. Fix the deficiencies and then fill the tank, OR
  - C. Refuse to fill the tank
14. "1005 Non-Flammable Gas" placards must be located where on all nurse tanks in anhydrous ammonia operations? (select all that apply)
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- B. Chock them
18. You should never handle a hose by:
- C. The valve wheel
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- A. Liquid or vapor
20. Which of the following tanks is ready to be filled:
- E. None of the above - no signs, out of date pressure relief valve, faulty liquid level gauge or leaky valve
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- D. All of the above - indirect, vented chemical goggles, 5 gallons fresh water, NH<sub>3</sub> rubber gloves

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- D. All of the above - connected to tow vehicle by two chains crossed under the tongue with an approved hit pin as well as good conditioned tires with proper inflation
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- E. All of the above - exposed piping protection, sign with name address, phone number or nearest representative agent or owner of storage system, 100 gallons of clean water in open top container or deluge shower, means of locking all vapor and liquid valves when unattended
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