Odorant Verification

The purpose of this document is to address the performance and documentation of sniff-testing to determine if there is a distinctive detection of odorant in LP-Gas and the major change within NFPA 58.

Up until the 2017 edition of NFPA 58 4.2.3, it was required to verify the presence of odorant by sniff-testing or other means, and the results documented as follows:

1. When LP-Gas is delivered to a bulk plant

2. When shipments of LP-Gas bypass the bulk plant

In most cases, the transport driver delivering propane to your bulk plant would document a sniff test on the bill of lading.
Odorant Verification
Risk Engineering

In the 2017 edition of NFPA 58 4.2.3 was changed to the following: The presence of the odorant shall be verified by sniff-testing or other means and the results documented prior to final delivery to the end-use customer. This change means that the before propane is delivered to a customer who will use the propane for cooking, heating, or other appropriate means, a sniff-test or other means shall be performed.

Although a sniff test may now not be required by the transport driver, it is still advisable. This is the last step to verify odorant can be detected when going into your storage tanks. There has been a couple of instances of non-odorized propane delivered due to malfunctions of odorant injection systems from a terminal.

An additional line of defense to ensure odorant in the LP-Gas can be detected is to have the bobtail drivers perform and document a sniff test for each bobtail loaded and/or at each delivery. Many companies are now having a sniff test box added to their bulk delivery tickets.

**Odorant Testing “Other Means”**

In reference to the meaning of “other means” for testing the presence of odorant, you can refer to the Appendix A for 4.2.3, which describes the alternative of performing an odorant test with a stain tube. When it is known that propane has been received without or inadequate levels of odorant, it may be necessary to perform stain tube tests in the storage and customer tanks known to receive the product to determine if there is adequate levels of odorant.

**Rail Receiving**

As a reminder, when receiving LP-Gas by rail, a sniff test shall be performed and documented before unloading and perform a test for ammonia with red litmus paper. It is preferred to perform a stain tube test and photo the stain tube to document the level of propane.

Documenting photo of stain tube test.
Customer Odor Verification

Although it is an NFPA 58 requirement to verify there is odorant in the LP-Gas, it is also good to have your customers verify that they can also smell the odorant. Crum & Forster claims department recently denied a claim and won because the propane company had documentation with a customer signature which verified the claimant performed a sniff-test and could smell odorant in the gas. When setting up new customers, it is recommended to have the customer perform a sniff-test and document the test. Have the customer sign your company form for documenting this test. Sending out safety brochures with a scratch and sniff is another good company policy to provide safety information and a means to have the customer know what the odorant smells like should they have a leak. Again, document who and when you send this information.

Customer Acknowledgement: I acknowledge, by checking each of the following items, that:

☐ I have informed the service technician of all gas-burning appliances, gas lines, and unused piping not connected to any gas appliance on my property.
☐ I have been informed of what deficiencies, repairs &/or alterations, if any, were made to my gas system or appliances.
☐ I have been told what to do if I smell a gas odor or otherwise suspect a gas leak and have been shown how to turn the gas supply off at the tank or cylinder.
☐ I have smelled propane gas and can detect its odor.
☐ I have been told to consider installing one or more gas detectors that are listed by Underwriters Laboratories.
☐ I have received safety information and told to read it and share it with all family members.
☐ I am satisfied with the service work performed.

Conclusion

Review your company procedures to ensure your company has appropriate procedures in place to perform and document that a sniff-test or other appropriate means of testing for odorant in LP-Gas prior to the final delivery to the end user. Catching product that does not have a distinctive odor will save you time, expense, and customer complaints before getting into the customer distribution system.

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Because propane is flammable, DOT regulations and NFPA 58 require that propane be odorized before delivery to a bulk plant or when the shipment will bypass the bulk plant. Propane personnel are required to verify the presence of odorant at various times, typically through a “sniff test.” It is essential that you understand how to perform these tests safely and document them for your company.

WHEN PERFORMING A SNIFF TEST, AT TIME OF BULK PLANT DELIVERY:

- Protect yourself by wearing appropriate personal protective equipment (PPE).
- Vent only a small amount of liquid propane.
- Sniff only after the vent is closed and the liquid propane has vaporized.
- Understand your company’s policies and procedures, including how to document the presence of odorant, and what to do if you believe propane is not properly odorized.

WHEN PERFORMING A SNIFF TEST, WHILE LOADING A BOBTAIL:

- After you secure the plant liquid transfer hose to the cargo tank connection and before you fill the cargo tank, briefly open and close the transfer hose end valve.
- Vent a small amount of liquid propane through a #54 vent and then close it.
- Sniff the area immediately after the liquid vaporizes.
- If you can smell propane odorant, proceed with loading your truck.
- If you cannot smell propane odorant, or smell anything unusual, do not load the cargo tank. Contact your supervisor immediately and tell others not to load until approved by the facility manager or supervisor.
- Record your sniff test on your loading ticket, daily routing report, or other company form and proceed with the loading operation.

IF YOU CANNOT SMELL PROPANE ODORANT:

In some situations, odorant can oxidize or fade, thus producing a potential hazard. If you cannot detect propane odor via sniff test (or other measure, such as an odorometer), carefully take the following actions:

- Do not load the cargo tank or cylinder.
- Disconnect the transfer hoses and secure them in their storage racks.
- Contact your supervisor immediately.
- Warn others not to load until approved by your supervisor. Your company may also require you to close and tag the withdrawal valves on the storage container so that the propane is not distributed to consumers.

Discussion Topics

1. While loading a bobtail, you detect a smell you do not recognize. What do you do?
2. Discuss company and other practices for documenting propane odorants.

LEARNING ACTIVITY

Secure an odorometer and stain tubes and discuss alternative methods to verify odorant in different situations.

Verifying Propane Odorization

Source: Propane Delivery Operations and Cylinder Delivery [PERC]

For more information about verifying propane odorization, visit propanesafety.com.