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RegO® Field Topics

Purging ASME & DOT LP-Gas Containers

Field Topics are intended to provide useful information to the network of authorized LP-Gas and Anhydrous Ammonia distributors regarding the proper use of RegO® products. **Warning Bulletins** covering many of the hazards involved are available from RegO for more detailed information. These bulletins can be found in our **L-500, L-102 and NH3-102** catalogs. Neither the Field Topic or the Warning Bulletins are intended to conflict with federal, state, or local ordinances and/or regulations, which should be observed at all times. This information also is not intended to be a substitute for or to supplement any training in the safe handling and use of propane and related equipment, as required by any applicable law. By providing this material, ECI assumes no responsibility for providing any such training. Only individuals properly trained in the safe handling and use of propane and related equipment should be permitted to do so, and by providing this information, ECI does not assume responsibility for providing such training.

For more information on LP-Gas system requirements, refer to Liquefied Petroleum Gas Code (NFPA 58), National Fuel Gas Code (NFPA 54), National Propane Gas Association Safety Handbook, the RegO LP-Gas Serviceman's Manual L-545, RegO catalogs L-500/L-102/NH3-102, ANSI K61.1 Safety Requirements for Storage and Handling of Anhydrous Ammonia, as well as any applicable local codes and ordinances.

Purging ASME & DOT LP-Gas Containers

A critical process prior to installing any ASME & DOT containers is to ensure the container has been purged properly. The purging process can help to prevent the following problems:

- Excess or artificial pressure build up creating an air/gas mixture to appliances
 - Air/gas mixture can create nuisance service calls with improper combustion
 - Excess pressure can result in higher than normal pressure which can result in pressure relief discharge
- Moisture/water in the container
 - Moisture and water in the container can cause oxidation in the container which can cause rust to form on the inside of the container. Additionally, causing the odorant giving propane its unique smell to fade.
 - Moisture and water can cause regulator freeze up's to occur
- Slow filling of container
 - The excess pressure in the container will lower the pressure differential during the filling process creating a slower fill

- Other containers being affected
 - When multiple containers are connected, the unpurged container can cross contaminate other containers when they begin to equalize their pressure.

It is crucial for any container that has been opened to the atmosphere or completely depressurized to be re-purged before being placed back into service. If the container has been open to the atmosphere with fittings removed, inspect the bottom of the container to ensure there is no accumulated water. If so, the water must be drained out before any methanol is added to the container.

How to Purge a New Vacuum Purged Container

New containers are typically shipped with a vacuum purge preventing the need to completely purge the container of air. This process is done at container manufacturing level where the air in the container evacuated by use of a vacuum compressor typically around -26" mercury vacuum or about 2 PSIA absolute pressure. Although the container has been placed under a vacuum there are still crucial steps to follow to complete the purging process as follow:

1. Confirming the container has a vacuum. This can be done by use of a vacuum pressure gauge or High Pressure Presto-Link connected to the RegO App – Container Vacuum test under Gauge View.
2. Add methanol to the container as suggested below:

Container Size	Amount of Methanol
100 gallon	1 pint
250 gallon	2.5 pints
500 gallon	5 pints
1,000 gallon	10 pints
2,000 gallon	20 pints
1 pint of methanol per 100 gallons of container capacity. 100# ICC or DOT cylinders add 1/8 pint or 2 fluid ounces	

3. Pressurize the container with approximately 15 PSIG LP-Gas vapor. Never purge with liquid LP-Gas. Purging with liquid will cause the moisture vapor in the container to chill and remain in the container.
4. The container can now be filled. Do not fill the container beyond the filling level for transportation as referenced in NPFA 58 2024 9.6.2.1.
5. Once filling has been complete, all fittings and tank opening should be checked for leaks using an approved leak check solution.

How to Prevent a Container from Losing its Vacuum Purge

With so many new containers being furnished with a vacuum purge, there has been confusion on what to do. We suggest three basic rules to be followed. If any of the following rules are not complied with, the vacuum purge can be lost. If this occurs, the container will have to be purged using LP-Gas vapor. Follow the rules below:

Rule 1: Do not open any valves, do not remove any ACME caps, plugs and closures or you may lose the vacuum purge.

Rule 2: Neutralize the moisture left over from the hydrostatic test (ASME containers); add the appropriate amount of methanol alcohol to the container prior to introducing LP-Gas into the pre-purged container.

Rule 3: Connect a POL (CGA 510-left hand thread) line with vapor to the service valve and pressure container up 15 PSIG before attempting filling or the vacuum purge could be lost.



How to Purge a Container without Vacuum Purge

It is crucial for any container that has been opened to the atmosphere or completely depressurized to be purged before being placed into service. If the container has been open to the atmosphere with fittings removed, inspect the bottom of the container to ensure there is no accumulated water. Follow the below steps to properly purge the container:

1. Purging of containers should be performed in an approved area per NFPA 58 7.3.3 (2024 edition)
2. Determine if the container pressure is zero. If the container contains air pressure, the air may be vented to the atmosphere through the container service valve.
3. Inspect the container for any water accumulation. If present, thoroughly drain.
4. Using vapor pressure only (never use liquid propane) pressurize the container to 15 PSIG.
5. Open the container service valve and vent the vapor to the atmosphere.
6. Repeat items 4 and 5 for a total of 5 purge cycles.
7. Add methanol to the container as suggested below:

Container Size	Amount of Methanol
100 gallon	1 pint
250 gallon	2.5 pints
500 gallon	5 pints
1,000 gallon	10 pints
2,000 gallon	20 pints
1 pint of methanol per 100 gallons of container capacity.	

100# ICC or DOT cylinders add 1/8 pint or 2
fluid ounces

8. Repressurize the container to at least 15 PSIG.
9. Check the container fittings for leakage with an approved leak detection solution.
10. The container can now be filled and put into service.

A vacuum compressor can be also used to evacuate air in a container to about -26" mercury vacuum or about 2 PSIA absolute pressure. This method effectively removes water vapor after any water has been drained and reduces air in the container to about 10% of the volume at atmospheric pressure. No LP-Gas is vented into the atmosphere with this method.