

PURGING LP-GAS CONTAINERS

Up To 2000 Water Gallon Capacity
ASME & DOT Containers, including Motor Fuel Containers

PURGING AND MOISTURE REMOVAL

All new containers (and in some cases used containers) may contain water, air or other contaminants, and it is essential that these be removed before filling the container and placing it into service. Water vapor present in the gas vapor may cause regulator freeze-up at the inlet orifice and interrupt the gas service. Also, it may have an effect on the ability of the odorant to meet the present standards, as water can cause oxidation (rusting) on the inside of the container and result in "odorant fade". Air in the container will cause abnormally high pressure, with the result that the pressure relief valve may open. Air in the system is also likely to cause pilot flames to go out and result in a service call. Additionally, air in the container carries moisture, which can cause service problems. If a container is suspected of being depressurized or open to the atmosphere for a period of time, it must be re-purged as if it were a new container.

To purge a container, the following steps should be taken:

1. Purging of containers should be performed in an approved area (see NFPA #58).
2. Determine if the container pressure is zero. Should the container contain only air pressure, the air may be vented directly to the atmosphere through the service valve.
3. If free water is present in the container, it should be drained.
4. Pressurize the container to approximately 15 PSIG with LP-gas vapor. Never purge with liquid LP-gas; to do so will cause the moisture vapor to chill and remain in the container.
5. Fully open the container service valve and vent to a safe atmosphere.
6. Repeat #4 and #5 for a total of five purgings.
7. The usual five purge pressurization method requires the venting of about 15-18 gallons of LP-gas per 1000 gallons of container capacity.
8. Add the suggested amount of methanol (see chart below) and close valve. Methanol must be used in an approved and safe manner. Refer to the methanol MSDS for proper handling and warnings.
9. Repressurize the container with odorized LP-gas vapor to 15 PSIG.
10. The container is now ready to be filled with LP-gas.
11. Once filled, all fittings and tank openings should be checked for leaks using an approved leak detector solution.
12. The container is now ready to be placed in service.

Methanol Injection Chart - Suggested Amounts

1 pint of methanol per 100 gallons of container capacity
 100# I.C.C. or D.O.T. cylinder add 1/8 pint or 2 fluid ounces

100 gallon container	add 1 pint
250 gallon container	add 2½ pints
500 gallon container	add 5 pints
1000 gallon container	add 10 pints
2000 gallon container	add 20 pints

ALTERNATE PURGE METHOD UTILIZING A COMPRESSOR

An LP-gas compressor can be used to evacuate air in a container to about 26" of mercury vacuum (2 PSI absolute pressure) when discharging to atmosphere. Hose suitable for vacuum service should be used and all unused valves must be closed. Protective caps on both liquid fill and vapor equalizing valves must be screwed on tightly to prevent air from entering the container when vacuum is applied. When pressure has been reduced to 26" of mercury vacuum, LP-gas vapor can be introduced until the container has reached atmospheric pressure. Add methanol as suggested and the container is then ready to be filled with liquid LP-gas.

This method effectively removes water vapor after the water is drained and reduces air in the container to about 10% of the volume at atmospheric pressure. No LP-gas is released to the atmosphere with this process. Evacuation time with a 36 CFM compressor is approximately 15 minutes per 1000 gallons of tank capacity. A 16 CFM compressor would take approximately 30 minutes per 1000 gallons of tank capacity.

ADDENDUM

- A. See NFPA-58 for more information on purging.
- B. Consult Material Safety Data Sheet (MSDS - Methanol) for additional information on care and handling of methanol.
- C. Consult NPGA Safety Bulletin on "Static Electricity"

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The purpose of this bulletin is to set forth general safety practices for the installation, operation, and maintenance of LP-gas equipment. It is not intended to be an exhaustive treatment of the subject, and should not be interpreted as precluding other procedures which would enhance safe LP-gas operations. Issuance of this bulletin is not intended to nor should it be construed as an undertaking to perform services on behalf of any party either for their protection or for the protection of third parties. The National Propane Gas Association assumes no liability for reliance on the contents of this bulletin.

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