



PS-7—2019

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POSITION STATEMENT

SAFE TRANSPORTATION OF COMPRESSED GAS CYLINDERS AND CRYOGENIC LIQUID CONTAINERS IN PASSENGER VEHICLES

Question

What is the safe way to transport cylinders and cryogenic liquid containers in passenger vehicles?

Answer

Transporting compressed gas cylinders and cryogenic liquid containers in automobiles, closed vans, and other unsuitable vehicles has led to a considerable number of incidents, many of them resulting in deaths.

All compressed gases can pose hazards when transported. Gases released from a cylinder or container can migrate from the trunk of a car or from the rear of a closed cargo van into the driver or passenger compartment. Leaking cylinders or cryogenic liquid containers can present hazards such as asphyxiation, a flammable atmosphere, exposure to toxic or corrosive materials, or oxygen enrichment. Flammable gas from a leaking container in the trunk of a car can be ignited by a spark from a brake light, tail light, or turn signal. Leaking oxygen cylinders can increase the risk of ignition. Also, an unsecured or improperly secured cylinder or cryogenic liquid container can become dislodged during transport creating a hazard to vehicle occupants or other vehicles on the roadway.

The preferred method of transporting compressed gas cylinders and cryogenic liquid containers is with a truck or other vehicle, which is specifically designed for container transport by securing them in a vertical position and providing sufficient ventilation to prevent the accumulation of any discharged gases. The customer may pick up a cylinder or cryogenic liquid container, or arrange for it to be picked up, provided a suitable vehicle is used.

A suitable vehicle is one that has adequate ventilation to prevent the formation of a hazardous atmosphere in the event of a product leak and an adequate method of securing the container so that it cannot be dislodged during normal driving maneuvers or in the case of an accident.

Some patients and their caregivers need to transport oxygen in their personal vehicles for medical use. The recommendations of this position statement should be followed whenever practical.

For additional information regarding transport of medical oxygen in other means of transportation, see CGA P-67, Guideline for the Safe Transport of Medical Oxygen or Oxygen Concentrators for Personal Use in Public and Commercial Transportation. [1]

Recommendations and practices

1. Compressed gas cylinders or cryogenic liquid containers designed to use a valve protection device shall have such a device installed on the cylinder or container before transporting.
2. Remove any detachable equipment that is not protected by the valve protection device prior to transporting.
3. All compressed gas cylinders or cryogenic liquid containers should be adequately secured in the vehicle before transporting. For example, cylinders or containers may be secured to the vehicle with straps to not freely move while the vehicle is in motion.

4. Transport liquefied flammable gas cylinders in a position so that the pressure relief device shall always be in direct communication with the gas phase. Never put flammable gas containers in trunks of cars or unventilated areas of passenger vehicles.
5. Do not allow container temperatures to exceed 125 °F (51.7 °C). Excessive heat causes relief devices to actuate and discharge gases into the atmosphere of the vehicle.
6. Companies should only offer cylinders or containers for transport that can be properly secured in an adequately ventilated area of the vehicle.
7. Specialized vehicles such as ambulances, home care equipment delivery vans or trucks, and commercial beverage delivery vehicles may be used to transport the products or containers for which they have been designed or modified to handle.
8. Products and containers shall meet applicable regulations, which include U.S. Department of Transportation (DOT) or Transport Canada (TC) container specifications and shipping requirements for labeling, marking, and placarding. Additional state, provincial, territorial, or local regulations can exist for the transportation of compressed gases on public highways.
9. Table 1 shows the recommended maximum weight or volume of products offered for transportation by customers in suitable passenger vehicles provided the recommendations of this position statement are followed.

Table 1—Recommended maximum amount offered for transportation ¹⁾

	Liquefied petroleum gas ²⁾	Acetylene	Other (flammables, pyrophorics)	Toxic	Oxidizers	Inerts	Cryogenic liquids ³⁾
Passenger vehicle ⁴⁾	90 lb	<u>Not recommended ⁵⁾</u>	<u>Not recommended ⁵⁾</u>	<u>Not recommended ⁵⁾</u>	150 ft ³	150 ft ³	<u>Not recommended ⁵⁾</u>
¹⁾ Flammable gases should not be transported in the same vehicle with oxidizers. ²⁾ No single liquefied petroleum gas cylinder shall exceed 45 lb (20 kg) [4]. ³⁾ Excluding oxygen for personal medical use. ⁴⁾ Vehicles include, but are not limited to: cars, station wagons, passenger vans, SUVs, crossovers, etc. ⁵⁾ <u>Not recommended for transportation in a passenger vehicle.</u>							

Supplier responsibility

The following practices are recommended in cases where customers intend to use their vehicles:

- Inform the customer of the potential hazards and appropriate regulations that apply to the transportation of cylinders and cryogenic liquid containers in writing including the information in the sections titled "Notice to customers who wish to transport cylinders or cryogenic liquid containers" and "Customer responsibility";
- When required by regulation, ensure the valve outlet of the cylinder or cryogenic liquid container to be transported is sealed with a plug or cap. Valves designed to use a valve protection device shall always be protected by a valve protective collar (guard), a valve protection cap, or other suitable means unless, as in the case of a single medical oxygen cylinder, it is being used while in transport;
- Ensure that the cylinder or cryogenic liquid container condition meets DOT or TC requirements;
- Check that proper tags, product, and warning label(s) are affixed to the cylinder or cryogenic liquid container as applicable; and