

WAC 296-24-68203 Cylinders and containers. (1) **Approval and marking.** All portable cylinders used for the storage and shipment of compressed gases must be constructed and maintained in accordance with the regulations of the United States Department of Transportation, 49 C.F.R. Parts 171-179.

(a) You must legibly mark compressed gas cylinders, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking must be by means of stenciling, stamping, or labeling, and must not be readily removable. Whenever practical, you must locate the marking on the shoulder of the cylinder.

Note: This method conforms to the American National Standard Method for Marking Portable Compressed Gas Containers to Identify the Material Contained, ANSI Z 48.1-1954.

(b) Compressed gas cylinders must be equipped with connections complying with the American National Standard Compressed Gas Cylinder Valve Outlet and Inlet Connections, ANSI B 57.1-1965.

(c) All cylinders with a water weight capacity of over thirty pounds must be equipped with means of connecting a valve protection cap or with a collar or recess to protect the valve.

(2) **Storage of cylinders - General.**

(a) You must keep cylinders away from radiators and other sources of heat.

(b) Inside of buildings, you must store cylinders in a well-protected, well-ventilated, dry location, at least twenty feet from highly combustible materials such as oil or excelsior. Cylinders should be stored in definitely assigned places away from elevators, stairs, or gangways. You must locate assigned storage spaces where cylinders will not be knocked over or damaged by passing or falling objects, or subject to tampering by unauthorized persons. You must not keep cylinders in unventilated enclosures such as lockers and cupboards.

(c) You must close the valves on all empty cylinders.

(d) Valve protection caps, where cylinder is designed to accept a cap, must always be in place, hand-tight, except when cylinders are in use or connected for use.

(3) **Fuel-gas cylinder storage.** Inside a building, you must limit cylinders, except those in actual use or attached ready for use, to a total gas capacity of two thousand cubic feet or three hundred pounds of liquefied petroleum gas.

(a) For storage in excess of two thousand cubic feet total gas capacity of cylinders or three hundred pounds of liquefied petroleum gas, you must provide a separate room or compartment conforming to the requirements specified in WAC 296-24-68211 (6)(h) and (i), or you must keep cylinders outside or in a special building. Special buildings, rooms or compartments must have no open flame for heating or lighting and must be well ventilated. They may also be used for storage of calcium carbide in quantities not to exceed six hundred pounds, when contained in metal containers complying with WAC 296-24-68213 (1)(a) and (b). Signs should be conspicuously posted in such rooms reading, "Danger—No smoking, matches or open lights," or other equivalent wording.

(b) You must store acetylene cylinders valve end up.

(4) **Oxygen storage.**

(a) You must not store oxygen cylinders near highly combustible material, especially oil and grease; or near reserve stocks of carbide and acetylene or other fuel-gas cylinders, or near any other substance likely to cause or accelerate fire; or in an acetylene generator compartment.

(b) You must separate oxygen cylinders stored in outside generator houses from the generator or carbide storage rooms by a noncombustible partition having a fire-resistance rating of at least one hour. This partition must be without openings and must be gastight.

(c) You must separate oxygen cylinders in storage from fuel-gas cylinders or combustible materials (especially oil or grease), a minimum distance of twenty feet or by a noncombustible barrier at least five feet high having a fire-resistance rating of at least one-half hour. (Cylinders "in-use," secured to a hand truck or structural member, with regulators, hoses, and torch temporarily removed for security purposes overnight or weekends, are not considered "in-storage.")

(d) Where a liquid oxygen system is to be used to supply gaseous oxygen for welding or cutting and the system has a storage capacity of more than 13,000 cubic feet of oxygen (measured at 14.7 psi(a) and 70°F), connected in service or ready for service, or more than twenty-five thousand cubic feet of oxygen (measured at 14.7 psi(a) and 70°F), including unconnected reserves on hand at the site, it must comply with the provisions of the Standard for Bulk Oxygen Systems at Consumer Sites, NFPA No. 566-1965.

(5) Operating procedures.

(a) You must keep cylinders, cylinder valves, couplings, regulators, hose, and apparatus free from oily or greasy substances. You must not handle oxygen cylinders or apparatus with oily hands or gloves. A jet of oxygen must never be permitted to strike an oily surface, greasy clothes, or enter a fuel oil or other storage tank.

(b) When transporting cylinders by a crane or derrick, you must use a cradle, boat, or suitable platform. You must not use slings or electric magnets for this purpose. Valve-protection caps, where cylinder is designed to accept a cap, must always be in place.

(c) You must not drop or strike cylinders, nor must you permit them to strike each other violently.

(d) You must not use valve-protection caps for lifting cylinders from one vertical position to another. You must not use bars under valves or valve-protection caps to pry cylinders loose when frozen to the ground or otherwise fixed; the use of warm (not boiling) water is recommended. Valve-protection caps are designed to protect cylinder valves from damage.

(e) Unless cylinders are secured on a special truck, you must remove regulators and you must put valve-protection caps in place, when provided for, before cylinders are moved.

(f) Cylinders not having fixed hand wheels must have keys, handles, or nonadjustable wrenches on valve stems while these cylinders are in service. In multiple cylinder installations only one key or handle is required for each manifold.

(g) You must close cylinder valves before moving cylinders.

(h) You must close cylinder valves when work is finished.

(i) You must close valves of empty cylinders.

(j) You must keep cylinders far enough away from the actual welding or cutting operation so that sparks, hot slag, or flame will not reach them, or you must provide fire-resistant shields.

(k) You must not place cylinders where they might become part of an electric circuit. You must avoid contacts with third rails, trolley wires, etc. You must keep cylinders away from radiators, piping systems, layout tables, etc., that may be used for grounding electric circuits such as for arc welding machines. You must prohibit any practice such as the tapping of an electrode against a cylinder to strike an arc.

- (l) You must never use cylinders as rollers or supports, whether full or empty.
- (m) You must not tamper with the numbers and markings stamped into cylinders.
- (n) You must not attempt to mix gases in a cylinder unless you are a gas supplier. You must not refill a cylinder unless you are the owner of the cylinder or the person authorized by the owner.
- (o) You must not tamper with safety devices in cylinders or valves.
- (p) You must not drop or otherwise roughly handle cylinders.
- (q) Unless connected to a manifold, you must not use oxygen from a cylinder without first attaching an oxygen regulator to the cylinder valve. Before connecting the regulator to the cylinder valve, you must open the valve slightly for an instant and then close it. (Always stand to one side of the outlet when opening the cylinder valve.)
- (r) You must not use a hammer or wrench to open cylinder valves. If valves cannot be opened by hand, you must notify the supplier.
- (s) You must not tamper with or make any attempt to repair cylinder valves. If trouble is experienced, the supplier should be sent a report promptly indicating the character of the trouble and the cylinder's serial number. You must follow supplier's instructions as to its disposition.
- (t) You must avoid complete removal of the stem from a diaphragm-type cylinder valve.
- (u) You must place fuel-gas cylinders with valve end up whenever they are in use. You must store and ship liquefied gases with the valve end up.
- (v) You must handle cylinders carefully. You must not subject cylinders to rough handling, knocks, or falls which are liable to damage the cylinder, valve or safety devices and cause leakage.
- (w) Before connecting a regulator to a cylinder valve, you must open the valve slightly and closed immediately. You must open the valve while standing to one side of the outlet; never in front of it. You must not crack fuel-gas cylinder valves near other welding work or near sparks, flame, or other possible sources of ignition.
- (x) Before a regulator is removed from a cylinder valve, you must close the cylinder valve and release the gas from the regulator.
- (y) You must not place anything on top of an acetylene cylinder when in use which may damage the safety device or interfere with the quick closing of the valve.
- (z) If cylinders are found to have leaky valves or fittings which cannot be stopped by closing of the valve, you must take the cylinders outdoors away from sources of ignition and slowly emptied.
- (aa) A warning should be placed near cylinders having leaking fuse plugs or other leaking safety devices not to approach them with a lighted cigarette or other source of ignition. Such cylinders should be plainly tagged; the supplier should be promptly notified and you must follow instructions provided by the supplier as to their return.
- (bb) You must not tamper with safety devices.
- (cc) You must not use fuel-gas from cylinders through torches or other devices equipped with shutoff valves without reducing the pressure through a suitable regulator attached to the cylinder valve or manifold.
- (dd) You must always open the cylinder valve slowly.
- (ee) You must not open an acetylene cylinder valve more than 1 1/2 turns of the spindle, and preferably no more than 3/4 of a turn.

(ff) Where a special wrench is required you must leave it in position on the stem of the valve while the cylinder is in use so that the fuel-gas flow can be quickly turned off in case of emergency. In the case of manifolded or coupled cylinders at least one such wrench must always be available for immediate use.

(gg) When cylinders are transported by powered vehicle you must secure them in a vertical position.

(hh) You must use a suitable cylinder truck, chain, or other steadying device shall be used to prevent cylinders from being knocked over while in use.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, and 49.17.060. WSR 15-24-100, § 296-24-68203, filed 12/1/15, effective 1/5/16. Statutory Authority: Chapter 49.17 RCW. WSR 91-03-044 (Order 90-18), § 296-24-68203, filed 1/10/91, effective 2/12/91; WSR 88-11-021 (Order 88-04), § 296-24-68203, filed 5/11/88; Order 73-5, § 296-24-68203, filed 5/9/73 and Order 73-4, § 296-24-68203, filed 5/7/73.]