

SANTA ROSA FIRE DEPARTMENT FIRE PREVENTION BUREAU STANDARD

July 1, 2010



HOME OXYGEN SAFETY

Purpose

This bulletin provides general safety information for oxygen concentrators, compressed gas cylinders, oxygen – conserving devices, and liquid oxygen systems used for medical purposes in private homes, apartments and condominiums. This bulletin is a summary of Fire Department interpretations of City and State Codes and information contained herein applies to typical instances and may not address all circumstances.

Oxygen is not flammable, but it can cause other materials that burn to ignite more easily and to burn far more rapidly. The result is that a fire involving oxygen can appear explosive-like.

Oxygen is of great benefit to those in need of oxygen therapy but it should always be handled with caution and awareness of the potential hazards.

Code References

Santa Rosa City Code, Chapter
1994 City Code (UFC) Section

THE EQUIPMENT

There are three common ways of providing oxygen therapy. Oxygen can be delivered to your home in the form of a gas in various-sized cylinders or as a liquid in a vessel. The third way to provide oxygen therapy is by using an oxygen concentrator. Each method is examined in more detail below.

COMPRESSED GAS

Oxygen is stored under pressure in a cylinder equipped with a regulator that controls the flow rate. Because the flow of oxygen out of the cylinder is constant, an oxygen-conserving device may be attached to the system to avoid waste. This device releases the gas only when you inhale and cuts it off when you exhale. Oxygen can be provided in a small cylinder that can be carried with you, but the large tanks are heavy and are only suitable for stationary use.

This standard outlines the general requirements for the installation and maintenance of Fire Sprinkler Systems. Information contained herein applies to typical instances and may not address all circumstances.

LIQUID OXYGEN

Oxygen is stored as a very cold liquid in a vessel very similar to a thermos. When released, the liquid converts to a gas and you breathe it in just like compressed gas. This storage method takes up less space than the compressed gas cylinder, and you can transfer the liquid to a small, portable vessel at home. Liquid oxygen is more expensive than the compressed gas and the vessel vents when it is not in use. An oxygen-conserving device may be built into the vessel to conserve the oxygen.

OXYGEN CONCENTRATOR

This is an electronically powered device that separates the oxygen out of the air, concentrates it, and stores it. This system has a number of advantages because it doesn't have to be re-supplied and it is not as costly as liquid oxygen. Extra tubing permits the user to move around with minimal difficulty. Small, portable systems have been developed that afford even greater mobility. You must have a cylinder of oxygen as a backup in the event of a power failure.

Standard
Home Oxygen Safety

QUANTITY LIMITS

- Do not use individual compressed gas oxygen cylinders that exceed 250 cubic feet at normal temperature and pressure.
- Do not use liquid oxygen vessels that exceed 10 gallons.

SAFETY

- **NEVER SMOKE WHILE USING OXYGEN.**
- Warn visitors not to smoke near you when you are using oxygen.
- Post at least one **NO SMOKING** sign in a prominent place at the entrance to your home.
- When you go to a restaurant with your portable oxygen source, sit in the **NON-SMOKING** section and away from any open flame such as candles or warming burners.
- Stay at least five feet from gas stoves, candles, lighted fireplaces and other heat sources.
- Keep oxygen cylinders and vessels in a well-ventilated area (not in closets, behind curtains, or other confined space). The small amount of oxygen gas that is continually vented from these units can accumulate in a confined space and become a fire hazard.
- Keep oxygen cylinders and vessels a minimum of 8 feet from heaters, heat producing and electrical appliances.
- Secure oxygen cylinders and vessels to a fixed object or place in a stand.
- Oxygen cylinders and vessels must remain upright at all times. Never tip an oxygen cylinder or vessel on its side or try to roll it to a new location.

Inspections shall be scheduled a minimum of 48 hours in advance. Directions for scheduling are found at:
<http://ci.santa-rosa.ca.us/news/Pages/AutomatedFireInspectionRequestSystem.aspx>