



DIVISION OF DISABILITY AND ELDER SERVICES

BUREAU OF QUALITY ASSURANCE  
2917 INTERNATIONAL LANE, SUITE 300  
MADISON WI 53704

Jim Doyle  
Governor

Helene Nelson  
Secretary

State of Wisconsin

Department of Health and Family Services

Telephone: 608-243-2024

FAX: 608-243-2045

dhfs.wisconsin.gov

## DRAFT

**Date:** May 3, 2004

**BQA Memo 04-015**

**To:** Adult Family Homes  
Community Based Residential Facilities  
Residential Care Apartment Complexes

AFH - 06

CBRF - 08

RCAC - 07

**From:** Kevin Coughlin, Chief  
Assisted Living Section

**Via:** Susan Schroeder, Director,  
Bureau of Quality Assurance

### Safe Storage, Handling, and Use of Oxygen

The purpose of this bulletin is to provide guidelines for the safe storage, handling, and use of oxygen in assisted living facilities. When concerns arise regarding unsafe storage, handling and use of oxygen, the following provisions of the Wisconsin Administrative Code should be considered:

- ✓ Section HFS 83.21(4)(w). Residents have the right to live in a safe environment. The CBRF shall safeguard residents who cannot fully guard themselves from an environment hazard to which it is likely that they will be exposed, including both conditions which would be hazardous to anyone, and conditions which are hazardous to the resident because of the resident's condition or disability.
- ✓ Section HFS 88.05(3)(b). The home shall be kept free from hazards and kept uncluttered and free of dangerous substances, insects and rodents.
- ✓ Section HFS 89.34(17). Tenants have the right to live in a safe environment.

NOTE: Failure to comply with any of the following guidelines may result in the issuance of a deficiency or notice of finding.

## **SAFE STORAGE, HANDLING AND USE OF OXYGEN (Assisted Living)**

### **I. Potential Hazards**

Oxygen and nitrous oxide, the gases normally used for respiratory therapy, are strong oxidizing gases and individually, or as a mixture, support combustion quite readily. Inhalation gases or vapors introduce fire, chemical, mechanical, and electrical hazards that are all interrelated. Any mixture of respiratory gases will support combustion.

In an oxygen-enriched atmosphere, materials that are flammable and combustible in air ignite more easily and burn more vigorously. The flammable materials that could be found on or near residents include hair oils, oil-based lubricants, skin lotions, clothing, linens, paper, rubber, alcohol, acetone, and some plastics. Sources of ignition can include open flames, burning tobacco, electrical heating coils, defective electrical equipment, and heating of gases.

1. A hazard exists if any of the components of an oxygen or nitrous oxide supply system become contaminated with oil or grease.
2. A hazard exists if either oxygen or nitrous oxide leaks into a closed space, creating an oxygen-enriched atmosphere.
3. A hazard exists if improper components are connected to equipment containing pressurized oxygen or nitrous oxide.
4. A hazard exists if a pressurized cylinder is struck (or strikes something else) hard enough to break off the valve. The contents of the cylinder could be discharged with sufficient force to impart dangerous reactive movement to the cylinder.
5. A hazard exists if a heavy or bulky cylinder or container falls over, which can cause personal injury or property damage.
6. A hazard exists if the equipment is improperly maintained, handled or assembled.
7. A hazard exists if the cylinders or contents are improperly located so they can become overheated.

### **II. Storage Requirements**

1. Containers should be stored away from doorways and away from areas exposed to foot traffic so as not to impede resident movement or treatment.
2. Caution signs, readable from a distance of 5 feet, should be conspicuously displayed on each door or room or enclosure where oxygen is stored.
3. No smoking shall be allowed within a storage room. Signs should be posted to indicate this restriction.
4. Containers shall not be subject to temperature extremes. High temperature of 130°F.
5. Containers shall be adequately secured and stored in a vertical position to prevent swinging or dropping. Racks or fastenings are recommended.

6. Room shall be mechanically ventilated, which is operated continuously. The room or enclosure shall be provided with lockable doors or gates.
7. Combustible storage materials such as paper, cardboard, plastics, or fabrics shall not be stored in the same room/enclosure as the oxygen containers. Exception: Shipping crates or cartons of wood rack construction with the shipping wrappers removed prior to storage may be stored in the same room/enclosures as the oxygen containers.
8. Keep all cylinders away from radiators, steams pipes, and like sources of heat.
9. The contents of each cylinder shall be identified by attached labels or stenciling.
10. Separate cylinders that are full from those that are empty.
11. Electrical wall fixtures, switches, and receptacles, if installed, shall be installed according to NFPA 70, and in fixed locations not less than 5 feet above the floor.

### **III. Precautionary Measures**

1. A carbon dioxide or dry chemical extinguisher shall be available where there is a possibility of an oxygen fire involving electrical equipment. A water-based extinguisher and a sprinkler system may be used in oxygen fires not involving electrical equipment.
2. Notify the local fire department when the facility is using oxygen.
3. Emergency procedures shall contain provisions on how to address an oxygen spill or leak.
4. Oxygen shall not be used in shared rooms where residents cannot be instructed or are unable to understand precautions and demonstrated safety procedures.
5. Ambulatory residents on oxygen therapy, whether in or out of a facility, shall be permitted free access to all areas that prohibit smoking and have no open flames.

### **IV. Transferring Requirements**

1. Transferring of liquid oxygen from one container to another shall be conducted as follows:
  - a. The area where the transferring is taking place shall be separated from any part of a facility where residents are housed or treated by a separation of a fire barrier of 1-hour fire-resistive construction;
  - b. The area where the transferring is taking place is mechanically ventilated, has a sprinkler system, and has ceramic or concrete flooring; and
  - c. Caution signs are posted in the area where the transferring is taking place indicating that oxygen transferring is in progress and that smoking in the immediate area is not permitted.
2. The base of the reservoir shall be contained by a tip-resistant holder at all times.
3. The filling/transferring of liquid oxygen shall occur at least 5 feet away from electrical appliances such as electric wheelchairs, televisions, radios, air conditioners, and fans.

**V. Sources**

1. Guide for the Safe Storage, Handling, and Use of Liquid Oxygen in Health Care Facilities, 2<sup>nd</sup> Edition, Compressed Gas Association (CGA), Pamphlet CGQ P-2.7-2000.
2. Transfilling of Liquid Oxygen to be used for Respiration, Compressed Gas Association (CGA), Pamphlet P-2.6-1983.
3. NFPA 99 Health Care Facilities (1999 ed.) Chapter 8 – Gas Equipment.