

9.7.4.2 Safety relief mechanisms, non interchangeable connectors, and other safety features shall not be removed, altered, or replaced.

9.7.5 Special Precautions - Storage of Cylinders and Containers.

9.7.5.1 Storage shall be planned so that cylinders can be used in the order in which they are received from the supplier.

9.7.5.2 If stored within the same enclosure, empty cylinders shall be segregated from full cylinders.

9.7.5.3 Empty cylinders shall be marked to avoid confusion and delay if a full cylinder is needed in a rapid manner.

9.7.5.4 Cylinders stored in the open shall be protected as follows:

- (1) Against extremes of weather and from the ground beneath to prevent rusting
- (2) During winter, against accumulations of ice or snow
- (3) In summer, screened against continuous exposure to direct rays of the sun in those localities where extreme temperatures prevail

9.7.5.5 No cylinders containing oxygen or nitrous oxide, other than those connected to anesthetic apparatus, shall be kept or stored in anesthetizing locations.

9.8 Gas/Vacuum Systems Maintenance and Record Keeping.

9.8.1 Permanent records of all tests required by 5.1.12.3.1 through 5.1.12.3.14 shall be maintained in the organization's files.

9.8.2 The supplier of the bulk cryogenic liquid system shall provide documentation of vaporizer(s) sizing criteria to the facility.

9.8.3 An annual review of bulk system capacity shall be conducted to ensure the source system has sufficient capacity.

9.8.4 Central supply systems for nonflammable medical gases shall conform to the following:

- (1) Be inspected annually
- (2) Be maintained by a qualified representative of the equipment owner
- (3) Have a record of the annual inspection available for review by the authority having jurisdiction

9.8.5 A periodic testing procedure for nonflammable medical gas/vacuum and related alarm systems shall be implemented.

9.8.6 Whenever modifications are made or maintenance is performed that breaches the system, the verification tests specified in 5.1.12.3 shall be conducted on the downstream portions of the medical gas piping system.

9.8.7 A maintenance program shall be established for the following:

- (1) The medical air compressor supply system in accordance with the manufacturer's recommendations.
- (2) The facility shall establish a testing and calibration procedure that assures carbon monoxide monitors are calibrated at least annually or more often if recommended by the manufacturer.
- (3) Both the medical-surgical vacuum piping system and the secondary equipment attached to medical-surgical vacuum station inlets to ensure the continued good performance of the entire medical-surgical vacuum system.
- (4) The WAGD system to assure performance.

9.8.8 Audible and visual alarm indicators shall meet the following requirements:

- (1) Be periodically tested to determine that they are functioning properly
- (2) Have the records of the test maintained until the next test is performed

9.8.9* Medical-surgical vacuum station inlet terminal performance, as required in 5.1.12.3.10.4, shall be tested as follows:

- (1) On a regular preventive maintenance schedule as determined by the facility maintenance staff
- (2) Based on flow of free air (NL/min or SCFM) into a station inlet while simultaneously checking the vacuum level

9.9 Policies and Procedures.

9.9.1 Administration. Administrative authorities of health care organizations shall provide policies and procedures for safe practices.

9.9.1.1 Purchase specifications shall include the following: (1)

Specifications for cylinders

- (2) Marking of cylinders, regulators, and valves
- (3) Proper connection of cylinders supplied to the facility

9.9.1.2 Training procedures shall include the following:

- (1) Maintenance programs in accordance with the manufacturer's recommendations for the piped gas system
- (2) Use and transport of equipment and the proper handling of cylinders, containers, hand trucks, supports, and valve protection caps
- (3) Proper uses of the medical-surgical vacuum system in order to eliminate practices that reduce the system's effectiveness, such as leaving suction tips and catheters open when not actually aspirating, and using equipment arrangements that are improperly trapped or are untrapped

9.9.1.3 Policies for enforcement shall include the following:

- (1) Regulations for the storage and handling of cylinders and containers of oxygen and nitrous oxide
- (2) Regulations for the safe handling of oxygen and nitrous oxide in anesthetizing locations
- (3) Prompt evaluation of all signal warnings and the performance of all necessary measures to reestablish the proper functions of the medical gas system
- (4) The capability and resources of the organization to cope with a complete loss of any medical gas system
- (5) All tests required in 5.3.12 successfully conducted prior to the use of any medical gas piping system for patient care

Chapter 10 Manufacturer Requirements

10.1 * Applicability. This chapter applies to equipment manufactured for use in the delivery of patient care.

10.2* Patient-Care-Related Electrical Appliances.

10.2.1 Mechanical Construction.

10.2.1.1 Separation of Patient Circuits. Patient-connected circuits within an appliance shall be separated or insulated from