

IACUC Policy on the Sterilization of Instruments and Supplies for Aseptic Surgery Procedures

PREFERRED METHODS

The preferred method for sterilization of items such as surgical instruments, drapes, gowns, and other items, which can withstand high temperature, is autoclaving (high temperature/high pressure steam). The Department of Laboratory Animal Resources can assist investigators with autoclaving of properly wrapped instruments and surgical accessories.

For items which cannot withstand high temperature, gas sterilization, using an approved gas sterilizer and appropriate monitoring systems to assure sterilization and personnel safety, is recommended.

CHEMICAL STERILIZATION

In considering the methods for sterilization it is important to remember to differentiate between sterilization and disinfection. Sterilization kills all viable microorganisms, while disinfection only reduces the number of viable microorganisms. High level disinfection will kill most vegetative microorganisms, but will not kill the more resistant bacterial spores. Commonly used disinfectants such as alcohol, iodophors, and quaternary ammonium compounds are not sterilants and, therefore, are not acceptable for use on items that require sterilization.

Effective and proper use of chemical sterilization is dependent on many factors including:

1. The use of chemicals classified as “sterilants.” Those classified only as “disinfectants” are not adequate.
2. The physical properties of the item being sterilized. It must be relatively smooth, impervious to moisture, and of a shape that permits all surfaces to be exposed to the sterilant.
3. Exposure. All surfaces, both interior and exterior, must be exposed to the sterilant. Tubing must be completely filled, and the materials to be sterilized must be clean and arranged in the sterilant to assure total immersion.
4. Time. The items being sterilized must be exposed to the sterilant for the prescribed period of time.
5. Use of fresh solutions. The sterilant solution must be clean and fresh. Most sterilants come in solution consisting of two parts that when added together form what is referred to as an activated solution. The shelf life of activated solutions is indicated in the instructions for the commercial product. Generally this is from one to four weeks.
6. Rinsing chemically sterilized items. Instruments, implants, and tubing should be rinsed both inside and out with sterile saline or sterile water prior to use to avoid tissue damage.