



Dedicated to a Better Way of Life through Plants™

Sterilizing Glassware and Instruments

Metal Instruments are best sterilized using a glass bead sterilizer, Product Number S636 or S637. These sterilizers heat to approximately 275-350° C and will destroy bacterial and fungal spores that may be found on your instruments. The instruments simply need to be inserted into the heated glass beads for a period of 10 to 60 sec. The instruments should then be placed on a rack under the hood to cool until needed.

Metal instruments, glassware, aluminum foil, etc., can also be sterilized by exposure to hot dry air (130°-170°C) for 2-4 hr in a hot-air oven. All items should be sealed before sterilization but not in paper, as it decomposes at 170°C. Autoclaving is not advisable for metal instruments because they may rust and become blunt under these conditions.

Instruments that have been sterilized in hot dry air should be removed from their wrapping, dipped in 95% ethyl alcohol, and exposed to the heat of a flame. After an instrument has been used, it can again be dipped in ethyl alcohol, re-flamed, and then reused. This technique is called *flame sterilization*. Safety is a major concern when using ethyl alcohol. Alcohol is *flammable* and if spilled near a flame will cause an instant flash fire. This problem is compounded in laminar flow hoods due to the strong air currents blown towards the worker. Fires commonly start when a flamed instrument is thrown back into the alcohol beaker. In case of fire do not panic. Limiting the supply of oxygen can easily put out fires.

Autoclaving is a method of sterilizing with water vapor under pressure. Cotton plugs, gauze, labware, plastic caps, glassware, filters, pipettes, water, and nutrient media can all be sterilized by autoclaving. Nearly all microbes are killed by exposure to the super-heated steam of an autoclave for 10-15 minutes. All objects should be sterilized at 121°C and 15 psi for 15-20 min.

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