RUTGERS UNIVERSITY Office for Research	RUAC STANDARD OPERATING PROCEDURE	
TITLE: Operation and Use of Glass Bead Sterilizers		
SOP Category: Veterinary	**RUAC SOP #: 7.11**	**Page: 1 of 3**
Effective Date: 12/03/2024	**Approval:** David C Pennington DVM	
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SCOPE:

This document describes the procedures to be followed for the operations and use of glass bead sterilizers. This SOP applies to all Animal Care Staff (ACS), ACS Supervisors (ACSS), Veterinary Staff (VS), and Research Staff members (RS) at the Rutgers University facilities.

OBJECTIVE: The objective of this SOP is to outline the proper use and maintenance of glass bead sterilizers. Glass bead sterilizers offer quick sterilization of clean surgical instruments between subjects during the same surgical event for rodent species only.

PROCEDURES:

General Operation

- Turn power switch into the "ON" position and wait approximately 15-30 minutes for the unit to reach the proper temperature (~240˚C to 270˚C). Some units have a "STERILIZE" light that illuminates indicating when the beads have reached the appropriate temperature

- Sterilize only clean and dry solid metal instruments

  - Remove all organic material (e.g., blood, tissue) from instruments prior to inserting into the glass beads. Organic material left on the instruments may become baked-on, making it difficult to remove and beads may adhere to the wet/contaminated portions of the instruments
  - The instruments may also be cleaned with a neutral pH detergent, enzyme detergent, saline, or chlorhexidine solution prior to inserting into the glass beads.

- Gently insert instrument into glass bead well

  - The top ½ inch of beads may not be hot enough for proper sterilization. Instruments must be inserted at least ½ inch further than the area needing to be sterilized

- Sterilization time varies depending on instrument size

- Small instruments (e.g., small scissors, forceps) take ~15 seconds to sterilize, while larger instruments (e.g., large scissors or bone instruments) take ~30 seconds.
  - Do not overload the well with multiple instruments. Insert only 1-2 instruments of comparable size into the well to ensure proper sterilization (Figure 1)
  - Instruments should be unlocked (not closed tight), and should not be touching each other or the bottom of the bead well

NOTE: **CAUTION** Instrument handles become very hot and cause burns when left too long in the sterilizer (>30 seconds)

- Instruments **must** be cooled before using on patients. Instruments that are still hot may burn patients or melt equipment. Cooling may be accomplished through using sterile saline and/or waiting at least 30 seconds before using for surgery. Alternating sets of instruments may allow continuation of procedures while waiting for instruments to cool.

MAINTENANCE:

- Glass beads should be replaced every 12 months under normal use or more frequently if grossly contaminated. Inserting only instruments that are dry and clean will help extend the working life of the beads.

- Replace beads when they have become contaminated with debris or if the bead level in the well is low. DO NOT pour new glass beads over old beads. Completely replace the glass beads when the level is low.

- To replace the beads, make sure the unit and beads are cool, and the unit has been turned off and unplugged for at least 4 hours.

- Cooled beads can be discarded in standard trash.

- A record of the date of bead changes should be kept by the lab.

Figure 1. Example glass bead sterilizer with proper instrument placement and clean glass beads within sterilizer.

REFERENCES:

Refer to the manufacturer instructions for model specific maintenance.