

**STANDARD OPERATING PROCEDURES**  
**DIVISION OF COMPARATIVE MEDICINE**  
**UNIVERSITY OF SOUTH FLORIDA**

SOP#: 1013

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<b>TITLE:</b>	<b>Monitoring Steam Sterilization of Liquids</b>
<b>SCOPE:</b>	Animal Care Personnel
<b>RESPONSIBILITY:</b>	Facility Manager and Technical Staff
<b>PURPOSE:</b>	To Outline the Proper Procedures for Assessing Efficacy of Steam Sterilization of Liquids Using MagnaAmp® Biological Indicators

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**I. PURPOSE**

1. MagnaAmp® biological indicators are used for monitoring the efficacy of steam sterilization of liquids in all facility autoclaves. Each biological indicator vial contains spores of *Geobacillus stearothermophilus* suspended in growth media with color indicators and is used to evaluate the adequacy of steam sterilization by observing color changes after incubation.

**II. RESPONSIBILITY**

1. The Facility Manager is responsible for training technical staff in the correct usage of the MagnaAmp® biological indicators.
2. The Facility Manager or their designee is responsible for weekly monitoring the efficacy of autoclave sterilization of drinking water by the use of MagnaAmp® biological indicators, or with each load, if autoclaves are not used weekly.

**III. PROCEDURE**

1. MagnaAmp® is a self-contained biological indicator ampoule for monitoring steam sterilization of liquids.
2. Suspend a MagnaAmp® ampoule with a string or wire inside a full water bottle so that it is positioned in the center of the bottle.
3. Place the water bottle with the MagnaAmp® indicator in an area of the load considered to be the most difficult to sterilize. When autoclaving a rack(s) of water bottles, this position would be in the center of the rack, and in the center of the load.
4. Process the load using the appropriate time/temperature.
5. After sterilization processing has been completed, allow water bottles to cool until safe to handle. Remove the MagnaAmp® indicator from the water bottle and allow to cool.

6. A positive control shall be run once a month, concurrently when a MagnaAmp® biological indicator is incubated, to validate the test result. This is accomplished by incubating a non-sterilized MagnaAmp® biological indicator vial of the same lot number as the test vial in the same incubator with the test indicator.
7. Place the MagnaAmp® ampoule(s) in the SURGICOT® Incubator. The incubator has a dry heating block, containing six indicator wells for incubation at 55-59° C. The incubator is equipped with a blinking red light on the top indicating that the correct temperature is achieved for incubation.
8. Incubate the MagnaAmp® test and control ampoule for 48 hours. Check the indicator vials the morning after, at 24 hours, and at 48 hours for test results. If sterilization of the indicator was achieved, the test indicator will show no color change during the incubation period, (e.g., the growth medium will remain purple).
9. If, at anytime during the incubation period, a color change occurs, the spores have survived the sterilization process and sterilization was not achieved. If a positive control ampoule (e.g., one that has not been autoclaved) does not turn color, do not use indicators from this lot.
10. When a color change is observed for a test ampoule, sterilization procedures are reviewed, the test repeated, and an entry is made on the **Equipment Log Sheet** in the **Autoclave Log Book**. If the indicator fails after the second attempt, the Facility Manager is notified, sterilization procedures are reviewed, and an entry is made on the **Equipment Log Sheet** stating the problem, the corrective action taken, and the resolution.
11. The results of monitoring should be recorded in the **Autoclave Sterilization Record**. If the indicator turns yellow, be sure to describe steps taken to identify the improperly sterilized load and resolve the lack of complete sterilization in the **Equipment Log Sheet**. Adjustments should be made and tests rerun until the problem is resolved.
12. Following incubation, dispose of processed indicators as you would other trash. Indicators have an expiration date. Be sure to use only in-date vials.
13. Monthly, **Autoclave Sterilization Records** are submitted to the Assistant Director with the **Monthly Archive Report**.

#### IV. SAFETY CONSIDERATIONS

1. Care should be taken when removing indicators from autoclaves, as they can be hot. Let indicators cool before removing.
2. Heat resistant autoclave gloves should be worn whenever handling/removing hot items from the autoclave.

3. A properly operating autoclave is essential for safety. Perceived problems should be reported to the Facility Manager immediately for corrective action.

**V. DOCUMENTATION REQUIRED**

1. Autoclave Sterilization Record

**VI. REFERENCES**

1. MagnaAmp® instruction booklet

**Approved:**

**Date:**