



## INTEGRATED BIOREPOSITORY OF H3AFRICA UGANDA

### MAKERERE UNIVERSITY

#### COLLEGE OF HEALTH SCIENCES

### STANDARD OPERATING PROCEDURE

TITLE: **BIOSAFETY CABINET SOP**

PAGE 1 of 8

SOP #: **IBRH<sub>3</sub>AU-SOP-EQPT-002.1**

Effective Date: **09/01/2014**

Next Rev: **DEC 2015**

Prepared by:

Reviewed by:

Approved by:

(Signature & Date)

NAME: Musinguzi Henry  
TITLE: Lab Manager

(Signature & Date)

NAME: Dr. Samuel Kyobe  
TITLE: Coordinator

(Signature & Date)

NAME: Prof Moses Joloba  
TITLE: Principal Investigator

### VALIDATION AND RETIREMENT

	NAME	DATE
Validated by:		
Retired by:		

### ACKNOWLEDGEMENT OF READING AND UNDERSTANDING

**I have received and understood the training on this SOP. If I have not understood the training I have asked the trainer to retrain me to ensure that I completely understand all the requirements.**

	NAME	SIGNATURE	DATE
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#### 1 INTRODUCTION

A biological safety cabinet is a valuable supplement to good sterile technique, but is not a replacement for it.

If the cabinet is not understood and operated correctly it may not provide an adequate protective barrier. To ensure operator safety the cabinet must be installed and operated per the manufacturer's instructions.

In order to keep the interior work area clean and free of particulates, all Baker biosafety cabinets are designed for continuous operation. If the blower is turned off, the work area will become contaminated with room air. Therefore it is recommended that the blower be left on at all times.

#### 2 PURPOSE

This SOP gives guidelines for using a class two biosafety cabinet

#### 3 SCOPE

This SOP applies to all IBRH3AU personnel that operate/use biosafety cabinets

#### 4 PROCEDURES

##### 4.1 Operator Controls

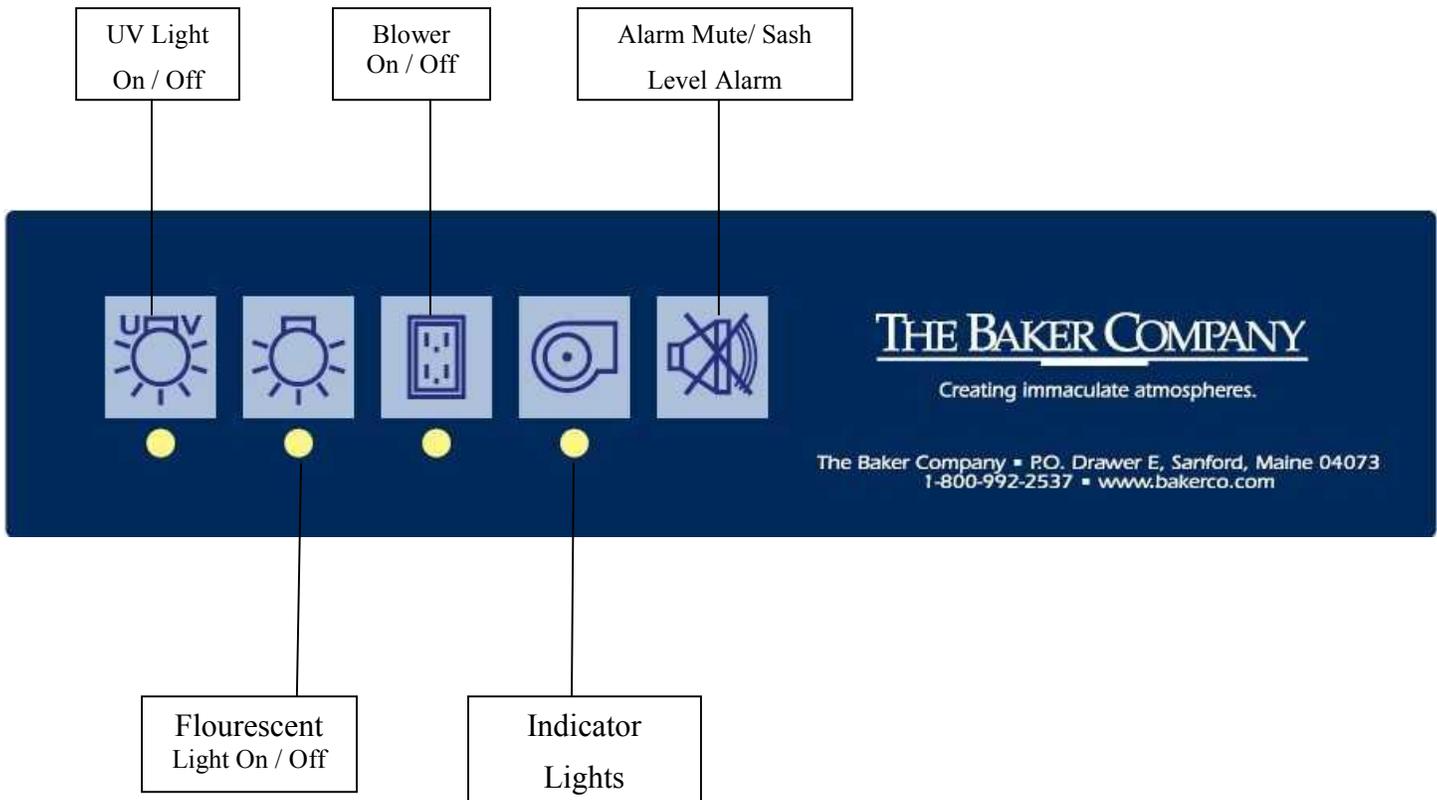
The operator controls with indicators are arranged on the front electrical panel of the cabinet. A number of switches are arranged in a single membrane switch assembly. [Reference Figure 2



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### 4.2 Ultraviolet (UV) Light on/off [optional]

This switch controls the UV Light inside the work area if the UV Light option is installed. The view screen must be fully closed before the UV light will turn on. The Fluorescent Light and the UV Light are interlocked. When the view screen is closed, turning the UV Light On will automatically turn the Fluorescent Light Off. Turning the Fluorescent Light On will automatically turn the UV Light Off. The UV light will automatically shut off if the view screen is opened. A yellow indicator light located below the switch will illuminate when the switch is on.

### 4.3 Fluorescent Light on/off

This switch controls operation of the Fluorescent Light. The cabinet blower must be on for the Fluorescent Light to operate. The Fluorescent Light and the UV Light are interlocked.

When the view screen is closed, turning the UV Light On will automatically turn the Fluorescent Light Off. Turning the Fluorescent Light On will automatically



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turn the UV Light Off. A Blue indicator light located below the switch will illuminate when the switch is on.

#### 4.4 Duplex outlets on / off

This switch controls the duplex outlets in the work area. A Blue indicator light located below the switch will illuminate when the switch is on.

#### 4.5 Blower on / off

This switch controls the power to the cabinet blower. A Green indicator light located below the switch will illuminate when the switch is on.

#### 4.6 Alarm mute / sash level alarm

For normal operation, the view screen must be placed at the allowable opening of 8" [203.2mm]. The sash alarm will be activated whenever the view screen is at a potentially unsafe position. To mute the audible alarm, press the alarm mute button. The indicator light located below the switch will continue to flash. After five minutes, if the conditions persist, the alarm will sound again to remind you to reposition the view screen to its proper level. You may press the alarm reset switch again to mute the audible alarm for an additional five minutes.

#### 4.7 Start-up procedure

- 4.7.1 If the cabinet has not been left running continuously, turn on the blower. An indicator light located below the switch will illuminate when the switch is on and the running blower will make an audible sound. Check the readings on the Magnehelic gauge, it should read a pressure consistent with the last time the cabinet was on.
- 4.7.2 Turn on the Fluorescent Light. The indicator light will illuminate along with the interior work area. (NOTE: The Fluorescent Light will not come on unless the blower switch is on. The Fluorescent Light and UV Light are interlocked so they cannot operate simultaneously.)
- 4.7.3 Check to determine that the drain valve is in the closed position or the drain coupling is capped.
- 4.7.4 If your cabinet has been purchased with the optional Ultraviolet Light (UV), lower the View screen to its fully closed position and turn the UV light on to make sure it is operational. (NOTE: The UV light option features an interlock that prohibits its operation unless the view screen is fully closed. The Fluorescent Light and UV Light are also interlocked so they cannot operate simultaneously.)
- 4.7.5 Wipe down the interior area of the cabinet with surface disinfectant. NOTE: Some disinfectants, such as bleach or iodine, may corrode or stain the steel surfaces. Good



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practice is to thoroughly clean the surface afterward with a detergent and rinse with sterile water to prevent corrosion.

- 4.7.6 Place all materials to be used for the next procedure inside the cabinet on the solid work surface. Disinfect the exterior of these materials prior to placing them on the work surface. Everything required (and nothing more) should be placed in the cabinet before beginning your work so that nothing passes in or out through the air barrier, until the procedure is completed. Implements should be arranged in the cabinet's work area in logical order so that clean and dirty materials are segregated, preferably on opposite sides of the work area. Blocking the front and rear perforated grilles must be avoided. If wipes or absorbent towels are used on the work surface, be sure to keep them away from the grilles.
- 4.7.7 After your equipment is in place inside the cabinet, adjust the sliding view screen so it is open to the correct opening height (8"[203.2 mm]). An alarm will signal if you are not at the proper opening. This is important to maintain proper cabinet airflow.
- 4.7.8 Insure that the padded armrest assembly is properly installed. You can begin working in the cabinet after it has run for at least three minutes with the view screen in the proper position.

#### 4.8 Working in the Cabinet

- 4.8.1 Hands and arms should be washed thoroughly with germicidal soap both before and after work in the cabinet. Operators are encouraged to wear long-sleeved gowns or lab coats with tight-fitting cuffs and sterile gloves. This minimizes the shedding of skin flora into the work area and protects hands and arms from contamination.
- 4.8.2 Perform all work on the depressed area of the solid work surface. Work with a limited number of slow movements. Since all of the equipment you need is already in the cabinet, it will not be necessary to move your arms in and out through the air barrier.
- 4.8.3 Because opening and closing doors in the laboratory causes air disturbance which might interfere with cabinet airflow, this kind of activity should be kept to a minimum while the cabinet is in use. Personnel should also avoid walking by the front of the cabinet while it is in use.
- 4.8.4 Avoid using floor-type pipette discard canisters. It is important that your used pipettes be discarded into a tray or other suitable container inside the cabinet. This reduces the temptation to move in and out of the work area unnecessarily.
- 4.8.5 Because of the restricted access, pipetting within the cabinet will require the use of pipetting aids.



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- 4.8.6 Use good aseptic technique within the cabinet.
- 4.8.7 Never operate your cabinet while the view screen alarm indicator is on. The operating position of the sash provides an 8” [203.2mm] access opening (depending on unit configuration). This restricted opening permits optimum operating conditions for the cabinet. Because operators will not all be the same height, it is suggested that the operator use a chair that may be adjusted for height
- 4.8.8 After a procedure has been completed, all equipment that has been in contact with the research agent should be enclosed, and the entire surface decontaminated. Trays of discarded pipettes and glassware should be covered. The cabinet should then be allowed to run for at least three minutes with no activity so that the airborne contaminants will be purged from the work area. Next, make sure that all equipment is removed from the cabinet
- 4.8.9 After you have removed all materials, culture apparatus, etc., decontamination of the interior surfaces should be repeated. Check the work area carefully for spilled or splashed nutrient that might support bacterial growth. Never use the cabinet to store supplies or laboratory equipment.
- 4.8.10 Leave the cabinet running continuously to ensure containment and cleanliness.
- 4.8.11 When the cabinet is not in use, the “Ready Safe Mode” can be engaged to reduce energy consumption by fully closing the sash. The blower speed is reduced and the fluorescent lights automatically turn off. The sash alarm will be silenced when the sash is in the fully closed position. When the sash is returned to safe operating height, the cabinet returns to normal operation and the lights can be turned on again.

#### 4.9 **Reacting to Spills**

- 4.9.1 Spills should be cleaned immediately to prevent cross contamination to the work and to avoid any damage to the stainless steel surfaces.
- 4.9.2 Apply 1% Virkon solution or liquid soap onto the spill and wipe away with a paper towel
- 4.9.3 Use 70% Ethanol to clean the residual soap
- 4.9.4 Do not use water to clean spills on the bench as it will lead to rusting.

## 5 **ATTACHMENTS**

- 5.1 Biosafety Cabinet maintenance log; refer to **IBRH3AU-FORM-012**



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**6 REVISION HISTORY**

<b>Revision No</b>	<b>Effective Date</b>	<b>Description of Changes Made from Preceding Revision</b>	<b>Approved by/ Date</b>

**ANNEX 1: DOCUMENTATION OF SUGGESTED CHANGES TO THIS SOP**

<b>CLAUSE</b>	<b>SUGGESTION</b>	<b>BY</b>	<b>DATE</b>