**PROTOCOL** 014

# LABORATORY OF FOREST PRODUCTS CHEMISTRY FACULTY OF FORESTRY UNMUL

	STANDARD OPERATING PROCEDURE		
	Brand: ESCO	Type: Horizontal air stream	Date:
	Title: How to use Laminar Flow Cabinet		Created by: Irawan W. Kusuma
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# **1. OBJECTIVE**

To provide instructions for the proper, effective, and efficient use of a laminar flow cabinet.

# 2. PRINCIPLES

A laminar flow cabinet is a device used as a sterile workspace for experiments requiring aseptic conditions, such as those involving microorganisms.

# **3. REQUIRED EQUIPMENT**

Laboratory coat, laboratory gloves, laboratory mask, clean tissue or cloth.

# 4. PROCEDURE

# 4.1. EQUIPMENT SETUP

- 4.1.1 Connect the laminar flow cabinet power cable to the power source;
- 4.1.2 The control panel on the front of the device consists of a light knob (I=fluorescent TL lamp; O=off; II=UV class C lamp for sterilization), a socket knob inside the sterile room (socket symbol), a fan knob (I=on, O=off) and a pressure gauge;
- 4.1.3 In general, a laminar flow sterile room contains a Bunsen burner, spatulas, scalpel knives, gas lighters, and markers;
- 4.1.4 Sterilize the laminar flow by turning on the UV light and turning off the fan at least 24 hours before use.

#### 4.2. USING LAMINAR FLOW CABINET

- 4.2.1 Before experimenting with laminar flow, turn off the UV lamp with the knob in position O or I;
- 4.2.2 Open the right door panel by lifting the handle and lowering it;
- 4.2.3 Turn on the laminar flow fan by moving the fan knob to position I;
- 4.2.4 Sterilize hands with disinfectant (e.g. 70% ethanol) each time they are put into a laminar flow sterile room;
- 4.2.5 All materials/equipment must be sprayed with disinfectant (e.g., 70% ethanol) before being placed in the sterile area;
- 4.2.6 Always have a Bunsen burner and sterile water available for sterilizing tools in the laminar flow cabinet;
- 4.2.7 After completing the experiment or testing, turn off the Bunsen burner and remove materials and equipment from the experiment/testing;
- 4.2.8 Clean the inside of the laminar flow using a soft cloth/tissue moistened with 70% ethanol;
- 4.2.9 Turn off the laminar flow fan by positioning the fan knob to position O;
- 4.2.10 Close the right side door of the laminar flow again by inserting the panel side into the gap of the top/bottom side of the laminar flow;
- 4.2.11 Turn on the UV light by setting the light knob to position II.

#### 4.3. ENDING THE USE OF THE LAMINAR FLOW CABINET

- 4.3.1 When not in use, turn off the lights and laminar flow fan and unplug the power cord from the power source;
- 4.3.2 Clean the work area and laminar flow parts of possible sample residue and other dirt.

#### 4.4. NOTE

- 4.4.1 UV class C lights can cause radiation exposure; turn them off when the laminar flow is in use;
- 4.4.2 The UV lamp and fan must always be in the opposite on/off condition;
- 4.4.3 Use gloves and a mask to avoid exposure to microorganisms ;
- 4.4.4 Careless use of Bunsen burners can result in burns and fires;
- 4.4.5 Do not touch the filter on the back side of the laminar flow;
- 4.4.6 The workspace and parts of the laminar flow must always be clean before and after use;
- 4.4.7 Read the user manual for more detailed information.

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