College/Unit:	**Department of Mechanical Engineering**
Procedure Title:	**Standard Operating Procedure #TE0003** **Decontamination Procedures**

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Revision History

Revisions to this procedure are to be documented in Table 1, Revision History.

Table 1: Revision History

Document Section	Details of Amendments	Date	Author (Initials)

1 Purpose

The purpose of this SOP is to follow proper procedures to decontaminate and sterilize specific equipment and material exposed to potentially biohazardous material.

2 Applicable To

Name (Print)	NSID	DEPT.	Signature	Date

3 Scope

This procedure covers equipment and materials in Room 1A26.

4 Definitions

SOP: Standard Operating Procedure
PPE: Personal Protective Equipment
SDS: Safety Data Sheets

5 Training Required

Laboratory Safety
WHMIS2015
Biosafety

6 Safety

Check SDS for safe handling procedures of the sterilizing and decontamination solutions used.

PPE requirements

- Safety glasses
- Lab Coat
- Appropriate gloves for the sterilizing and decontamination solutions used.

7 Equipment and Materials

The equipment to be decontaminated includes the 3D-Bioplotter, clean benches, incubator, scaffolding material and cultured cells. The chemicals used to decontaminate or sterilize specific equipment or materials are outlined in the following procedure.

8 Procedure

This section provides the steps involved in carrying out the decontamination and sterilization procedures.

1) 3D-Bioplotter and Terra Universal Clean Bench sterilization process

a. Turn on both clean bench fans;
b. Using a tissue and a solution of 70% ethanol, wipe and clean the surfaces of the Bioplotter, clean bench and work area. During this procedure, make sure that the Bioplotter is turned off;
c. After 10 minutes, repeat step b;
d. Keep fans on for at least 1 hour, then the Bioplotter work can be started.

2) **Envirco Clean Bench sterilization process**

a. Turn on the clean bench fan;
b. Using a tissue and a solution of 70% ethanol, wipe and clean the surfaces of the clean bench and work area.
c. After 10 minutes, repeat step b;
d. Keep fans on for at least 1 hour, then work can be started.

3) Tissue culture incubator decontamination

a. Turn off the incubator and the CO_2 tank valve and take out all of the shelves;
b. Wipe the interior of the incubator completely using a tissue and a solution of 50% bleach;
c. Wipe the incubator shelves completely using a tissue and a solution of 50% bleach;
d. Wipe the interior of the incubator using a tissue and deionized water;
e. Wipe the shelves using a tissue and deionized water;
f. Wipe the interior of the incubator completely using a tissue and solution of 70% ethanol;
g. Wipe the shelves using a tissue and a solution of 70% ethanol;
h. Put the shelves back into the incubator, turn the regulator of the CO_2 tank to the correct pressure, and turn on the incubator.

4) Material sterilization

a. Use a 0.22 μm bottle-top filter to filter the material solution;
b. Freeze and then freeze-dry the filtered material solution;
c. Dissolve freeze-dried material in sterilized solvent in a sterilized container;
d. The material should now be ready for use.

5) Decontamination of cells

a. Once cultured cells are contaminated, cells cannot be used anymore.

b. Add 10% bleach solution to cell culture medium to kill both bacteria and cells.

c. Dispose of mixture down the sink and decontaminate the sink.

9 References

Canadian Biosafety Handbook, Second Edition, May 26, 2016