Homogenizers

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# Purpose

<<<< This SOP is left in DOCX format so that you may edit it for your own laboratory and your own make and model of homogenizer mixer>>>

The purpose of this SOP is to lay out the responsibilities, equipment and procedures required for the use of a laboratory homogenizers to process biohazardous materials.

# Scope

This SOP applies to all persons prescribing and requiring to use a laboratory blender-style homogenizer to process biohazardous materials.

It is recommended that where possible, to purchase a ‘bead mill’ style of homogenizer due to ease and safety features of this technology.

# Responsibilities

## Supervisors

Supervisors are responsible for:

* **Reviewing this SOP on a regular basis. Review is to consider and mitigate the risks of spill, loss of containment and exposure or other harm. Refer to Performing Risk Assessments SOP.**
* Ensuring the equipment is in good working order.
* Ensuring that all workers under their supervision are trained on and are proficient in performing the steps of this SOP.

## Workers

Workers are responsible for:

* Following this SOP as approved by their supervisor
* Reporting any broken equipment immediately to their supervisor

# Equipment Needed

* Homogenizer
* Sealed chambers
* Kimwipes or paper towel
* Disinfectant
* Liquid waste beaker
* Squirt bottle of 70% ethanol
* Squirt bottle of MilliQ water

# Procedure

1. Homogenizing a sample does not sterilize it, or render it safe. If the sample is BSL2, you must work at BSL2 at all times.
2. Set up homogenizer in BSC.
3. Pre-fill chambers with homogenization buffer and place on ice inside BSC.
4. Pre-label tubes for downstream application and place on ice inside BSC.
5. Transfer samples from -70C to liquid nitrogen and bring to table beside BSC.
6. For each sample at a time, retrieve from liquid nitrogen with forceps, inside BSC transfer tissue into chamber with homogenization buffer and seal chamber.
7. Homogenize sample per homogenizer instructions.
8. Transfer homogenate into appropriately labelled sample tube.
9. Using squirt bottle, rinse chamber and blade with 70%, collecting runoff in waste beaker.
10. Using squirt bottle, rinse chamber and blade with MilliQ water, collecting runoff in waste beaker.
11. Re-use chamber and blade if necessary.
12. Upon completion of all samples, rinse chamber and blade as above. Then wash in warm soapy water, rinse well and allow to dry.
13. Place a handful of paper towels into the bag containing your solid waste in BSC. Pour runoff onto paper towels in bags. Use MilliQ bottle to rinse beaker. Add more paper towels to bag if necessary. There should be no leaks or drips. Collect all solid waste in BSC into bag and close bag. Spray out and deposit into biohazard waste.
14. Wash liquid waste beakers in warm soapy water, rinse well and allow to dry.
15. Process samples in downstream application, keeping at BSL2 if samples contain risk group 2 organisms, until inactivated.

# Training

1. Each lab member is to read, agree and sign off on this SOP.
2. Upon revision or re-write, this SOP is to be re-circulated and re-signed by all lab members.