1.0 PURPOSE:

Microfil® is a silicone injection compound used to fill and opacify microvascular and other spaces of non-surviving animals and post-mortem tissue under physiological pressure. Microfil® increases the contrast for imaging modalities, especially micro-computed tomography (MIcroCT).

2.0 SCOPE:

2.1 This SOP outlines the compound quantities required for completely perfusing a rodent.

2.2 Microfil can be prepared in a containment level 1 (CL1) laboratory.

3.0 RESPONSIBILITIES:

3.1 Someone trained by a qualified individual may perform this procedure.

4.0 DEFINITIONS:

Curing agent – a catalytic agent that brings about polymerization when it is mixed with Microfil (MV-122)

Microfil – silicone injection compound that becomes solid when mixed with MV-Curing Agent.

Perfusion – pumping a liquid into an organ or tissue (especially by way of blood vessels)

5.0 REFERENCES:

None.

6.0 MATERIALS AND EQUIPMENT:

6.1 MATERIALS

- Microfil® MV-122
- Microfil® MV-Curing Agent
- Microfil® MV-Diluent

6.2 EQUIPMENT

- 18 gauge needle
- 50mL centrifuge tube
- 60cc syringe
- IV bag (saline used or new)

7.0 PROCEDURES:

Procedure outlines the compound quantities required for completely perfusing a small animal.

7.0.1 MIX MICROFIL

Perform the mixing procedure next to a sink in a tray lined with paper towel. If any Microfil compound spills, wipe with a paper towel and dispose into a biohazard container.

1. Mix 25mL of MV-Diluent with 20mL of MV-122 into a 50mL centrifuge tube.

7.0.2 PREPARE FOR PERFUSION

1. Inject the Microfil compound using an 18 gauge needle into an empty IV bag.
2. Inject 2.25mL of MV-Curing Agent with an 18 gauge needle into the IV bag containing the Microfil compound.
   NOTE: The compound will begin to catalyze in about 15min. Complete setting occurs in 20-25min. An elastomeric gel will form after 90min at room temperature.
3. The Microfil may now be allowed to perfuse into the rodent.

7.1 SAMPLE STORAGE AND HOLDING TIMES:

The shelf life of Microfil is in excess of 4 months. Refer to manufacturer brochure for procedures related to testing if the product maintains its original properties. Microfil should be stored at room temperature in tightly capped bottles.

7.2 RISKS TO PERSONNEL AND PRECAUTIONS FOR RISK REDUCTION:

7.2.1 Refer to *section 7: Basic Safety* of the *Robarts Research Laboratory Health and Safety Manual* for standard lab safety practices.

7.2.2 Wear impervious (preferably non-latex) gloves and safety glasses. If there is contact with eyes, flush for 15 minutes with water at an eye wash station.

7.3 CONTINGENCIES:

7.3.1 SPILL OR LEAK

Spill or leak procedure is the same for all Microfil® compounds (MV-122, MV-Curing Agent, MV-Diluent).

Wipe, scrape or soak up in an inert material (eg. paper towel) and place in a box housed in the flammables cabinet until Chemical Waste disposal personnel picks up and disposes of the contents. Wash exposed surfaces with a disinfectant and water.

8.0 REPORTING AND DOCUMENTATION:

N/A

9.0 REVIEWS AND REVISIONS:

This procedure shall be reviewed for compliance and effectiveness and revised as necessary.

10.0 ATTACHMENTS and REFERENCE FORMS:

None