




<b>LOCATION DETAILS</b>		
School/Branch: School of Molecular & Biomedical Science		
<b>SAFE OPERATING PROCEDURE DETAILS</b>		
Date prepared: 07/04/2007	Review & Current version date: <b>28/01/2011</b>	Version: <b>2</b>
<b>PREPARED BY:</b> Name, position, & Signature (insert names of supervisor, HSO, subject matter expert)		
Tony Richardson – School Safety Co-ordinator Kate Millan – Health & Safety Officer		Signature: 
<b>RISK ASSESSMENT</b>		
See risk assessment dated: 24/01/2011		Risk Rating: <b>Medium</b>
<b>RISKS IDENTIFIED</b>		
<ul style="list-style-type: none"><li>• Asphyxiation from exposure to anaesthetic gases</li><li>• Exposure to infectious material through handling of mice/small animals.</li><li>• Fire caused by incorrect storage of gases or contact with ignition sources.</li></ul>		
<b>SAFETY PRECAUTIONS</b>		
The following control measures MUST be adhered to:		
<ul style="list-style-type: none"><li>• The equipment should only be used in room 5.24 with the exhaust system operating.</li><li>• All users must have sufficient training from a competent person prior to using the equipment. These training records must be documented on the School's Training Needs Analysis.</li><li>• SOP must be clearly displayed in the area of use.</li></ul>		
<b>PERSONAL PROTECTIVE EQUIPMENT REQUIRED</b>		
The following PPE must be worn at all times:		
<ul style="list-style-type: none"><li>• Gloves, lab coat and eye protection.</li></ul>		
<b>SAFE OPERATING PROCEDURE</b>		
<ol style="list-style-type: none"><li>1. TURN ON THE EXHAUST SYSTEM – The anaesthetic machine must not be operating if the exhaust system is not turned on.</li><li>2. Open the valves on the cylinders, the gauges on the anaesthetic machine should read 400KPa.</li><li>3. Fill the isoflurane container using the 'vapofil' attachment (see below).</li><li>4. Unlock the isoflurane vapouriser.</li><li>5. Attach the anaesthetic machine output to the anaesthetising box.</li><li>6. Place the animal in the box.</li><li>7. Set the isoflurane vapouriser setting to 3 for rats and 2 for mice.</li><li>8. Open the oxygen valve to a flow rate of 2 litres/min.</li><li>9. Open the nitrous oxide valve to 2 litres/min. (Note: if there is no Oxygen flow, the nitrous oxide flow will be blocked.)</li><li>10. Wait until the animal is unconscious.</li><li>11. Close the valve leading to the box.</li><li>12. Place the box close to the exhaust outlets on the bench. Open at arm's length and remove the animal. There is the potential to breathe the anaesthetic gas mix at this point – take care to avoid this.</li><li>13. Place the animal into an anaesthetic mask and turn on the valve leading to the mask.</li></ol>		

14. Adjust the isoflurane level to 2 for rats and 1.5 for mice. Adjust the oxygen to 1.5 litres/min and the Nitrous oxide to 1.5 litres/min.
15. Move the anaesthetic box near to a floor level exhaust inlet.
16. Complete your surgical procedure.
17. Turn off the oxygen and nitrous oxide valves on the anaesthetic machine and on the top of the cylinders.
18. Empty the isoflurane container as per the instructions below.

#### FILLING THE ISOFLURANE VAPOURISER

This will be done with a 'VAPOFIL' connector.

**Warning:** - Should fluid be detected on the outer clear tubing the vapofil unit may be damaged and should be taken to the safety co-ordinator for checking.

- Remove the anaesthetic bottle cap and check that the bottle neck is in good condition.
- Tightly attach the vapofil to the bottle (the connection must be airtight).
- Check that the vaporiser control dial is in the off position.
- Loosen the locking screw and remove the blank key seal from the vaporiser filler port.
- Hold the bottle below the filler port and insert the key end of the vapofil into the filler port and tighten the locking screw.

**Warning:** - Failure to obtain a gas tight seal at both ends of the vapofil may permit leakage of air into the bottle and consequent over filling of the vaporiser.

- Raise the bottle above the level of the filler port and then open the port valve by pulling the lever forward.
- When the vaporiser is full (i.e. up to the full mark on the sight glass) close the port valve by moving the lever back.
- Return the bottle to below the level of the filler port and allow any excess to drain back into the bottle.
- Loosen the locking screw and remove the vapofil from the filler port.
- Replace the blank key seal and tighten the locking screw.
- Remove the vapofil from the bottle and replace the normal cap.

#### DRAINING THE ISOFLURANE VAPOURISER

This will be done with a VAPOFIL connector.

**Warning:** - Should fluid be detected on the outer clear tubing the vapofil unit may be damaged and should be taken to the safety co-ordinator for checking.

- Remove the anaesthetic bottle cap and check that the bottle neck is in good condition.
- Tightly attach the vapofil to the bottle (the connection must be airtight).
- Check that the vaporiser control dial is in the off position.
- Loosen the locking screw and remove the blank key seal from the vaporiser filler port.
- Hold the bottle below the filler port and insert the key end of the vapofil into the filler port and tighten the locking screw.
- Lower the bottle below the level of the filler port and then open the port valve by pulling the lever forward.
- When the draining is complete close the port valve by moving the lever back.
- Loosen the locking screw and remove the vapofil from the filler port.
- Replace the blank key seal and tighten the locking screw.

- Remove the vapofil from the bottle and replace the normal cap.

#### **OTHER INFORMATION**

- The machine is set up to use Oxygen, Nitrous Oxide and Isoflurane. Full information on these gases can be found on Chemwatch.

#### **ADMINISTRATION**

Note: This Safe Operating Procedure must be reviewed:

- a) after any accident, incident or near miss
- b) if equipment, substances or processes change
- c) every 5 years.