Use of Isoflurane and Other Halogenated Anesthetics

1.0 Purpose and Scope:

To provide guidance for the use of Isoflurane and other halogenated anesthetics in the laboratory and animal facility environment. Isoflurane and other halogenated anesthetics are used at UW-Madison in animal research for a variety of research applications.

2.0 Definitions:

Teratogenic: a substance or agent that causes developmental malformations.

3.0 Guidance:

Isoflurane is considered a reproductive toxin and/or a teratogen.

4.0 Precautions:

The following information can be used to complete the Safety section of your animal protocol.

1. **Containment preparation** – (Containment equipment required for the preparation of the chemical): The type of containment required will vary depend on the method of use.
   a. When using an anesthesia vaporizer with nose cone, select both options and include additional information for Other.
      - Fume Hood
      - Other: The anesthesia vaporizer will be filled in a well ventilated area or under a chemical fume hood if possible. Required PPE to include gloves, lab coat, and safety glasses.
   b. When using all other methods, select both options and include additional information for Other.
      - Fume Hood
      - Other: The container must be filled and opened within a fume hood. Required PPE to include gloves, lab coat, and safety glasses.

2. **Containment animals** – (Containment equipment required for chemical administration and handling animals after exposure to the chemical): *(Select the following)*
   - No special containment needed

3. **PPE needed** - (for handling live animals, carcasses or animal waste/dirty bedding): *(Select all of the following)*
   - Exam gloves – nitrile
   - Safety glasses/goggles
   - Lab coat or disposable gown

4. **Waste Disposal**: *(Select the following)*
   - No special precautions needed for waste/dirty bedding
5. **Carcass disposal:** *(Select the following)*
   - No special precautions needed for disposal; use facility standard method.

6. **Chemical human risk:** *(Add the following statement)*
   Although there is no specific data regarding the health risks of isoflurane in humans, halogenated anesthetics in general have been associated with reproductive problems. When using isoflurane, staff will be notified of the potential hazards and safety signage will be posted near anesthetic machines for staff to reference proper isoflurane handling and use.

5.0 **References:**

   “Chemical Safety Practices Recommendations Isoflurane” NIH March 2015

   “Isoflurane SDS”

6.0 **Document Revisions:**

<table>
<thead>
<tr>
<th>Revision Number</th>
<th>Revision Date</th>
<th>Description of Revision</th>
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<tr>
<td>1</td>
<td>11/9/15</td>
<td>New Document</td>
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<tr>
<td>2</td>
<td>7/29/16</td>
<td>Clarified PPE requirement for containment preparation.</td>
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