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| Appendix A: Hazardous Materials information for AUP #       |
| **Identity of Hazard:** Isoflurane |
| PI name:       | Building/Rooms:       | Vivarium:       |
| **Provide a short description of the reagent(s):** Isoflurane is a halogenated gas that is clear, colorless, and highly volatile at normal temperature and pressure. Isoflurane is administered in conjunction with air or oxygen, typically to maintain a state of general anesthesia in animals. For rodents, 1-3% is used for maintenance and up to 5% for induction of anesthesia. |
| **This material is hazardous for:**[ ]  Humans only[ ]  Animals only[x]  Humans and animals[ ]  For which animal species?       | **The reagent can be spread by:**[ ]  Blood[ ]  Feces/urine[ ]  Saliva/nasal droplets[ ]  Does not leave animal[ ]  Other       |
| **Describe any human health risk associated with this agent**: Waste anesthetic gases possess very poor warning properties so odor is not an adequate indication of overexposure. Long-term exposure to waste anesthetic gases has been linked to various health hazards such as genetic mutations, cancers, spontaneous abortions, hepatic and renal disease and psychomotor changes in humans. Isoflurane is an eye and skin irritant and central nervous system toxicant. Long-term exposure may cause chronic or adverse health effects including nausea, dizziness, fatigue, headache, irritability, reduced mental performance, liver and kidney disease, and possible reproductive effects (sterility, infertility, miscarriages, and birth defects). Inhalation of isoflurane at high concentration levels (at or above 3%, v/v in air) may lead to death. |
| **The precautions checked below apply to this experiment:**[ ]  The researcher or his/her technicians are responsible for the feeding and care of these animals.[ ]  The following items must be assumed to be contaminated with hazardous material and must be handled only by the researcher or his/her technicians.

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| [ ]  Cage[ ]  Water Bottle[ ]  Animal Carcasses | [ ]  Bedding[ ]  Other       |

[ ]  Cages must be autoclaved before cleaning.[ ]  Label cages and remove label after decontamination.[ ]  Animal Carcasses must be labeled and disposed of as follows:

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| [ ]  Incineration[ ]  Bag and Autoclave | [ ]  Biohazardous Waste Container[ ]  EH&S will pick up (x5528) |

[ ]  All contaminated waste (soiled bedding or other animal waste) must be properly labeled and disposed of as follows:

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| [ ]  Incineration[ ]  Bag and Autoclave | [ ]  Biohazardous Waste Container[ ]  EH&S will pick up (x5528) |

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| **Personal Protective Equipment (PPE) Required:**[ ]  The following PPE must be worn/used in the room or when handling animals:

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| [x]  Lab Coat/Coveralls[ ]  Shoe Covers/Booties[x]  Disposable or Utility Gloves[ ]  Head Cover[ ]  NIOSH Certified Dust Mask | [ ]  Disinfectant Footbath[ ]  Eye/Face Protection[ ]  NIOSH Certified Fitted Respirator; Type      [ ]  Other       |

[ ]  PPE must be removed before leaving the room.[ ]  PPE must be discarded or decontaminated at the end of the project.[ ]  Hands, arms, and face must be thoroughly washed upon leaving the room.[ ]  Full shower, including washing of hair, must be taken upon leaving the room.[ ]  Decontaminate room (Inform Lead Animal Technician when cage and/or room can be returned to general use. |
| **Provide any other information needed to safely work in this designated area of research:**Isoflurane should be used either under a fume hood or with a scavenging device. Active scavenging is preferable to passive scavenging. Contact EH&S (ehslaboratory@ucr.edu) for isoflurane monitoring. Respirators must be requested through EH&S, surgical masks do not protect users from isoflurane vapors. Anesthesia machines and scavenging devices must be maintained in good working condition. Adsorption devices such as charcoal canisters must be properly placed so that vent holes on the bottom of the canister are not obstructed.  |