






# Chemical Safety Practices Recommendations

## Isoflurane (Isothesia)

Exposure Hazards(1, 2)			
<p>Category 2 Warning</p>  <p>Toxic to Reproduction</p> <p>Suspected of Damaging Fertility or the Unborn Child</p>	<p>Category 3 Warning Toxic</p>  <p>May Cause Drowsiness or Dizziness</p>	<p>Category 2 Warning Toxic</p>  <p>May Cause Damage to Cardio-Vascular System and Central Nervous System Through Prolonged or Repeated Exposure if Inhaled</p>	<p>Category 2 Warning</p>  <p>Eye Irritation</p> <p>Causes Serious Eye Irritation</p>
Response to Exposure			
<p style="text-align: center;"><i>Do Not Attempt to Operate a Vehicle if Dizzy or Drowsy</i> <i>Call 911 if Victim Loses Consciousness</i></p>			
Oral	Dermal	Inhalation	Injection
Rinse mouth; do not induce vomiting. Report to OHS.	Wash skin with soap and water for 15 minutes. Rinse eyes for 15 minutes. Report to OHS.	Leave area; go to clean air. Report to OHS.	Report to OHS.
<b>Special Precautions</b>	<p>Isoflurane is volatile and may be absorbed through the skin. HEPA filters will not prevent exposure.  <a href="#">Contact EHS at 301-846-1451 for exposure monitoring.</a></p>		
<b>Personal Protective Equipment</b>	<p>Gloves (Latex or Nitrile)            Skin Protection (Suit or Scrubs or Lab Coat)            Eye Protection (Safety-glasses or Goggles)            Closed-toe shoes            Respirator with Organic Vapor + P100 cartridges (3M #60926) if engineering controls are not available. Supplied air or SCBA systems should be used in the event of chemical spills.</p> 		
<b>Engineering Controls</b>	<p>Isoflurane may not be used in a system which recirculates air.            Isoflurane must be used in a 100% exhausted CFH or Class II, B2 BSC.(3, 4)  <a href="#">See NCI-Frederick Safetygram ISM-211 for additional details. (5)</a></p>		
<b>Animal Handling</b>	No special precautions.		
<b>Bedding Disposal</b>	No special precautions.		
<b>Work Practices</b>	Follow <a href="#">LASP SOPs</a> 3.047 and 5.025 as appropriate.		

### References:

1. Isoflurane MSDS [Internet]. Sigma-Aldrich. 2014 [cited 10/30/2014]. Available from: <http://www.sigmaaldrich.com/united-states.html>.
2. Isoflurane SDS [Internet]. Baxter. 2012 [cited 03/02/2015]. Available from: [www.baxter.com](http://www.baxter.com).
3. National Research Council Committee on Prudent Practices in the L. The National Academies Collection: Reports funded by National Institutes of Health. Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards: Updated Version. Washington (DC): National Academies Press (US) National Academy of Sciences.; 2011.
4. NIOSH. Waste Anesthetic Gases In Hospitals. In: NIOSH, editor.; DHHS; 2007.
5. Laboratory Waste Anesthetic Gases [Internet]. EHS. 2013. Available from: [https://ncifrederick.cancer.gov/ehs/Media/Documents/SafetyGram\\_ISM-211\\_AnestheticGas.pdf](https://ncifrederick.cancer.gov/ehs/Media/Documents/SafetyGram_ISM-211_AnestheticGas.pdf).

Questions or concerns: Please contact EHS, Ted Witte, [theodore.witte@nih.gov](mailto:theodore.witte@nih.gov) or 301-846-5860  
 Reviewed 03/02/2015 *These recommendations are not final and may be updated.*

# Chemical Safety Practices Recommendations

## Isoflurane (Isothesia)

Isoflurane is a halogenated ether used as an inhalation anesthetic. It readily evaporates at room temperature and has a pungent odor. Exposure above the occupational exposure limit has occurred if the odor can be detected.

Isoflurane is capable of causing prolonged anesthesia and unconsciousness at low levels or death at higher levels. The use of Isoflurane without appropriate ventilation may impair consciousness and motor skills. There is some indication that occupational exposure to waste anesthetic gases may reduce fertility or harm developing children. The LASP SOPs for the use of Isoflurane should be observed carefully.