

Safetygram

FNLCR

ISM-211

Laboratory

January 2013

Waste Anesthetic Gases (WAG)

Waste Anesthetic Gases (WAG) are a result of gases which are released during medical and surgical procedures. Exposure may generate from leaks in the tubing, seals and gaskets of the anesthetic machine, unfavorable work practices, poor ventilation, and ineffective gas scavenging systems.

Currently at FNL, Isoflurane is the mostly commonly used anesthetic gas. Other anesthetic gases include: Enflurane, Halothane, and Nitrous Oxide.

Potential health effects due to the exposure of WAG produced by the commonly used anesthetic gases are inconclusive. Employees who are over exposed to WAG may experience nausea, dizziness, headaches, fatigue, and irritability. WAG is a suspected reproductive hazard. Currently NIH, and likewise FNL, utilizes the following 8-hour Time weighted average occupational exposure limits:

Anesthetic Gas	OEL (parts per million)
Isoflurane	2.0 ppm
Enflurane	75.0 ppm
Halothane	50.0 ppm
Nitrous Oxide	50.0 ppm

Contact x1451 to coordinate monitoring.

Reduce your potential for exposure to WAG:

- Request EHS monitoring.
- Initially and periodically perform leak tests with a leak detector (contact EHS is necessary).
- Enclose the procedure area inside of a ducted Biosafety Cabinet, a Chemical Fume Hood, or other exhausted enclosure. If this is not feasible, utilize an exhaust system to the house vacuum system.
- Never rely solely upon the charcoal scavenging systems as they have shown to not be effective at eliminating overexposures at FNL.
- Comprehensive knowledge of the equipment being used and the manufacturer's operating instructions.
- Ensure the induction chamber is sealed and locked when the anesthetic is being delivered and only open inside of an exhausted enclosure.
- Inspect and repair seals and gaskets around the induction chamber to ensure a tight seal.
- Avoid excessive flow rates of WAG.
- Fill vaporizers in a well-ventilated area such as a chemical fume hood.
- Perform annual preventative maintenance on the anesthetic equipment.
- If applicable, create a nose cone for small animals.

Resources:

<http://www.osha.gov/SLTC/wasteanestheticgases/index.html>

[http://www.ors.od.nih.gov/sr/dohs/Documents/Waste%20Anesthetic%20Gas%20\(WAG\)%20Surveillance%20Program.pdf](http://www.ors.od.nih.gov/sr/dohs/Documents/Waste%20Anesthetic%20Gas%20(WAG)%20Surveillance%20Program.pdf)