



INHALATION ANESTHESIA SYSTEMS

HONEST ANSWERS FROM KNOWLEDGEABLE PEOPLE

First Time Buyer's Guide

If this is the first inhalation anesthesia system you've purchased for your facility, we invite you to begin/enhance/complete your anesthesia equipment research with the "What you need and don't need" information.

1. If you are only working with rats, mice, cats, ferrets and other like sized creatures, you do NOT need a CO₂ Absorber (a.k.a. rebreathing head, SodaSorb container) on your anesthesia machine.
2. You need a "carrier gas" supply. This gas, usually oxygen or medical air, carries the anesthetic vapor into the patient's lungs as it breaths. Its pressure, as it is stored in a cylinder, powers the anesthesia machine.
3. You need a carrier gas flowmeter that will allow you to deliver the carrier gas as slowly as ½ liter per minute to a nosecone or as fast as 1 to 4 liters per minute to an induction chamber.
4. You need a good, reliable and valid vaporizer. A vaporizer is to an anesthesia machine as an engine is to a car. It needs to be "agent specific," originally manufactured for the agent you want to use. The only time that fact does not hold true is when a Halothane vaporizer is dedicated to Isoflurane or vice versa.
5. You need an oxygen flush assembly. If you are unable to "flush out" your induction chamber, you will have no choice but to always work in a non-recirculating fume hood or a chemical fume hood with an activated carbon filter. If any vendor tells you otherwise, ask for independent test results showing their chamber can be precharged and opened or unflushed and opened without everyone in the procedure area being exposed above OSHA's Permissible Exposure Limits (PELs).
6. You need an induction chamber with a positive pressure seal. If you don't have one, see #5 above.
7. You need activated carbon filters that are reliable. The PEL for Isoflurane is 2 parts per million (ppm), the human nose can't detect Isoflurane until it reaches 50 ppm. It's



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- important to be confident that your carbon filter is working even when you can't smell the agent.
8. You need a non-rebreathing circuit that delivers the agent saturated gas from the machine to the patient, and then collects and contains the waste gas from the patient to an adequate disposal system.
 9. In the United States, Isoflurane Permissible Exposure Limits are an OSHA compliance issue. You must take whatever measures are necessary to keep your procedure area below the PEL of 2 ppm. Neither your procedures, the species you use, the things you're studying, the facility you're working in, or the company, agency or educational institute you work for have any effect on this fact; you must comply with the 2 ppm PEL.