

# Vetamac Vapors

(800)334-1583

www.vetamac.com

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Feel free to call between your annual service  
visits if you have questions or are having any problems.



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## Q & A's about WAG

This issue of Vapors will focus on questions related to waste anesthetic gas (WAG). The first question that is frequently asked is "Are activated charcoal canisters effective?". The straight forward answer is yes. There are, however, procedures that need to be followed to assure optimal results. Most canisters that are available are about the size of a pint jar and contain approximately 250 grams of charcoal. This amount can absorb approximately 50 grams of anesthetic vapor. To assure that WAG is being removed, the canister must be weighed before it is used and the weight recorded on the canister. When it has gained 50 grams, it must be discarded. One circumstance when these canisters may not be effective is during the administration of high oxygen flow rates in excess of 5 liters/minute. This rate moves the gas through the canister so quickly that the absorption of WAG is not complete. When using an F/air canister, it must be placed in a holder or laid on its side because all the gas entering the canister must exit through the holes in the bottom and these holes must not be obstructed. If used properly, charcoal canisters are an effective method to prevent exposure to WAG.

A question that arises next is "How do I know if I'm being exposed to WAG?". Badges are available much like radiation badges, that monitor exposure to WAG. These organic vapor badges are a very practical and economical way to monitor exposure. The badge is worn for one 8 hour shift by a person working in an area of potential risk for exposure. The badge, along with a form that provides information about the work area, is sent to a lab for analysis. This provides a time-weighted average of exposure. The cost of a badge is \$72, which includes the lab analysis, and badges may be purchased from Vetamac.

What are the limits of exposure? The National Institute for Occupational Safety and Health (NIOSH) is responsible for conducting and funding research and education and for preparing criteria documents to be used for the development of standards. The NIOSH standard for halogenated agents is two parts per million (PPM). The Occupational Safety and Health Administration (OSHA) has never enacted these standards. However, OSHA, under the "general duty clause", does have the authority to inspect workplaces to determine whether employers are providing a workplace free from hazards, even in the absence of a relevant standard. Even though OSHA does not have a standard for exposure, they use the NIOSH recommended standard for exposure. It should be noted that the American Conference of Governmental Industrial Hygienists (ACGIH) has recommended 50ppm as an

8 hour time-weighted average for a threshold limit for exposure to WAG. For additional information and discussion, please visit our website at [www.vetamac.com](http://www.vetamac.com) following the links for Services and Periodic Monitoring of Waste Anesthetic Gases.

Finally, we will address the question of WAG and pregnant staff. The staff member in question should first consult her physician and then her supervisor. Physicians are not unanimous in their opinions about this issue. Secondly, she should consult her supervisor. Different veterinary practices and institutions may have different policies. If a pregnant staff member is allowed to work in areas of potential exposure, there are several precautions to follow. First, all anesthetic and evacuation equipment should be properly maintained and serviced. Second, a non-pregnant staff member should wear an organic vapor badge to verify that exposure is below tolerable limits. After these precautions are followed and the pregnant staff member is allowed to work in the area, she should not fill vaporizers with liquid anesthetic and should not be in an area where animals are recovering from anesthesia. However, some physicians, practices, and institutions, and some pregnant individuals desire that there be zero exposure to WAG. The only way to accomplish this is for the individual to wear an organic vapor respirator.



These masks remove all organic vapors from the inspired air. They can be cumbersome but are very effective. A mask that is widely used is the 3M Organic Vapor Disposable Respirator 5000 Series. These masks are good for up to 3 hours, are available in small, medium and large (based on height), and cost around \$18. They can be purchased from the 3M website. Of course, the mask does not need to be worn if anesthesia is not being performed.

Contact Vetamac if you have any questions about WAG. All of us at Vetamac wish you a prosperous and blessed New Year!

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