

# Nitrous Oxide

## Your Right to Know

### Summary:

*NIOSH warns: Nitrous oxide continues to threaten health care workers. NIOSH has issued a warning to the hundreds of thousands of medical, dental, and veterinary professionals who work with nitrous oxide. The Institute warns that even with preventive measures, such as scavenging systems in place, these workers may be at risk for serious health effects due to their exposure.*

### Exposure Risks

A NIOSH Alert "...reports that even with scavenging systems in place, Institute researchers measured N<sub>2</sub>O exposures as high as 12 times the NIOSH recommended limit in dental operating rooms. The report clearly demonstrates that simply using a system is not sufficient, it must be continuously monitored and maintained to effectively reduce exposure to N<sub>2</sub>O.

Several human studies have shown that occupational exposure to N<sub>2</sub>O may cause reduced fertility, spontaneous abortions, and neurologic, renal, and liver disease, as well as documented decreases in mental performance, audiovisual ability, and manual dexterity. Animal studies have shown that exposure to N<sub>2</sub>O during gestation can produce adverse effects in offspring.

### Steps for Prevention:

*Monitor anesthetic equipment when installed and every 3 months thereafter.*

Leak test equipment

Monitor air in worker's breathing zone

Monitor the environment (room air)

*Prevent leakage from the anesthetic delivery system through proper maintenance and inspection of equipment.*

#### Check:

Loose fitting connections

Defective or worn seals, gaskets, etc.

*Control waste N<sub>2</sub>O with well-designed scavenging system that includes the following:*

Securely fitting masks

Sufficient flow rates

Properly vented vacuum pumps

*Make sure that the room ventilation effectively removes waste N<sub>2</sub>O. If concentrations of N<sub>2</sub>O are above 25 ppm, then:*

Increase air flow into room

Use supplemental local ventilation

*Institute an education program that describes N<sub>2</sub>O*

## Do You Know Your Nitrous Oxide Exposure?

*Passive dosimeters are the most convenient way to monitor your environment!*

The *Kem Medical VAPOR-TRAK*<sup>®</sup> 8530 nitrous oxide monitor has been validated for the 8-hour TWA exposure limit of 25 ppm.

All VAPOR-TRAK<sup>®</sup> badges are:

- Accurate, with reproducible results
- Easy to Use
- Designed for personal and area monitoring
- Full validation studies available
- Phone Notification of High Results
- Technical Assistance
- Pre-paid return postage and laboratory analysis inclusive

