

SAFE SEDATE™ DENTAL NASAL MASK

Better Compliance. Disposable. Improved Patient Comfort.



**That's what you get with the innovative Safe Sedate™ dental nasal mask system.
And you'll find it exclusively with Airgas Puritan Medical.**

Safe Sedate™ helps you better comply with government regulations and provide a better patient experience.

This innovation in administering nitrous oxide/oxygen reduces leakages, and that means major benefits for you and your staff. When used as directed, the Safe Sedate™ dental nasal mask system has been tested and shown to significantly reduce the exposure of nitrous oxide in dental offices. The more precise gas administration helps you better meet government compliance regulations for leakage and also ensures the safety of your staff and patients. Safe Sedate™ works with your existing equipment, whether it's from Airgas or another manufacturer. And the Airgas Puritan Medical experts are available to ensure that Safe Sedate works seamlessly with your dental practice.

SAFE SEDATE NASAL MASK

Evaluation of Two Dental Operatory Scavenging Systems Using Infrared Thermography and Real-time Air Analysis for Nitrous Oxide

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Nitrous oxide (N₂O) is used in dental practices to relieve mild pain and reduce patient anxiety. Acute and chronic exposure to unscavenged N₂O can cause a broad range of adverse health effects, including effects on the reproductive, hematological, and nervous systems and decreases in audio-visual performance. This effect is particularly undesirable in an environment where hand-eye coordination is critical and a majority of the affected workforce is female.

Nitrous oxide exposure reduction is achieved primarily through the utilization of scavenging systems in conjunction with administrative controls.

Study Objectives

- Evaluate the efficacy of two scavenging systems of divergent designs.
- Evaluate the systems' performance against the NIOSH REL for N₂O of 25 ppm during the time of administration.
- Evaluate the effect of work practices of users with varying levels of experience on the efficacy of one of these systems.



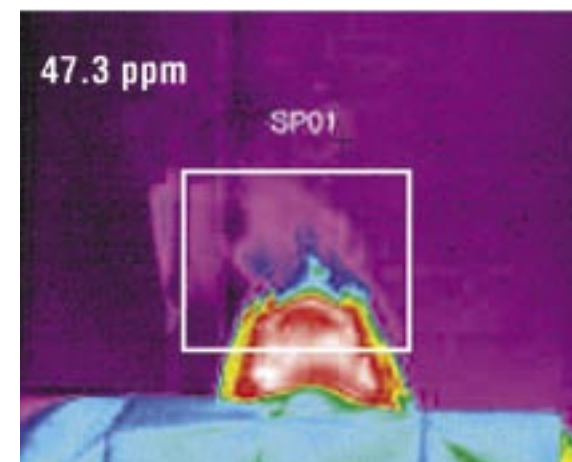
Results and Discussion

IR Image Qualitative Evaluation

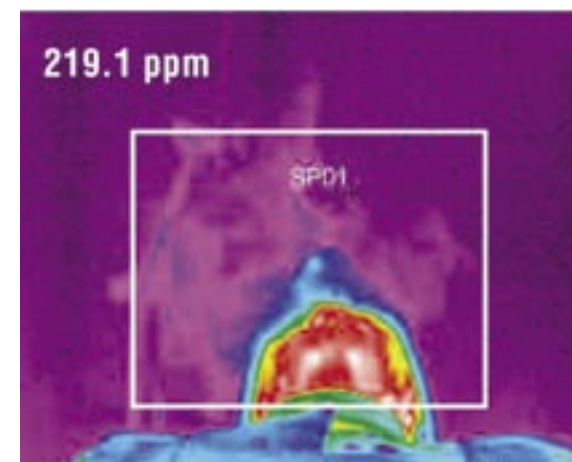
- The Safe Sedate mask results in emissions that produce a less diffuse, discontinuous stream than the Porter system.
- Work practices during the first five minutes of N₂O delivery were identified as key to the system efficacy for the remainder of the surgery.

Key work practices include:

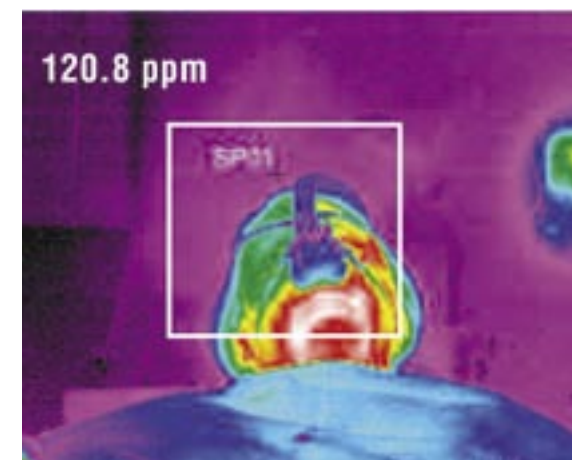
- Minimizing patient talking and mouth breathing.
- Appropriate utilization of system vacuum.
- Proper fit of mask.
- Patient and surgical variables affect waste gas emissions from both systems (e.g. level of sedation, effects of sedation, patient anxiety level, patient respiratory patterns, amount of manual manipulation required to complete surgical procedure).
- Increased visibility of emissions on IR images correlates to elevated air concentrations.
- Phases I and II: Porter vs. Safe Sedate: When use of both systems is combined with best work practices, the Safe Sedate system is significantly better than the PORTER system at reducing occupational exposure to waste anesthetic gas (Tukey HSD $p < 0.02$).
- Neither system achieved the NIOSH REL of 25 ppm for the average of the cases, but the Safe Sedate Mask did achieve the 50 ppm 8 hr TWA recommended by the ACGIH (American Conference of Government Industrial Hygienists). See chart on next page.
- Phases I and III: Surgeon #1 (Experienced) vs. Surgeon #2 (Inexperienced) with Safe Sedate System: The motivation and refined work practices of the experienced user resulted in a significant decrease in mean air concentration values compared to an inexperienced practitioner (Tukey HSD $p < 0.02$).



Phase I (Safe Sedate™, Experienced User)



Phase II (Porter Mask)



Phase III (Safe Sedate™, Inexperienced User)

Results: 8 hr TWA (ppm)

Sampling Day	Phase I Safe Sedate™ System Experienced User	Phase II PORTER System	Phase III Safe Sedate™ System Inexperienced User
1	41.3 ^A	118.1 ^A	66.2 ^A
2	38.2 ^A	173.6 ^A	133.0 ^{AB}
3	49.0	121.5	153.2 ^{AB}
4	N/A	N/A	99.7
Mean	42.8	137.7	113.0

^A 0-based extrapolation

^B Potentially confounded by N₂O emissions in adjacent operatories

Conclusions

The reduction of occupational exposure to nitrous oxide impacts both occupational and public health. While control of N₂O emissions below the established guidelines may be achievable, compliance is dependent on the scavenging system design, work practices, the practitioner's motivation for proper system utilization and maintenance, and less easily controlled patient and surgical variables. This study suggests that infrared videoimaging is a useful tool for assessing both the amount and behavior of waste gas emissions and for determining appropriate work practice modifications aimed at maximizing system performance.

Comfort for your patients.

With Safe Sedate™ there's no need for a tight seal to the patient's face. The specially designed system administers nitrous oxide exactly where it's needed, and evacuates any residual gas that is not inhaled. This allows a more comfortable fit without claustrophobic patient reactions. The mask is soft to the touch without the strong rubber odor of other systems. Your patients are better able to relax and see what's going on around them. And, they're able to move their head comfortably from side to side, without changing the position of the mask or causing leakage of nitrous oxide.

Convenience for your staff.

Other nasal masks are made of multiple pieces that are difficult to assemble and don't always fit well together. The one-piece Safe Sedate system is easy to use and reduces the escape of nitrous oxide into your office. The adjustable mask is easily fitted to the patient's face to ensure that nitrous oxide is delivered only to the nasal area. Because Safe Sedate does not restrict patient movement or have obstructive hoses, you're able to comfortably position yourself for better access to the work area. Safe Sedate is also shorter in height than other systems so it does not get in the way of your hands. You can see all of the patient's teeth and surrounding anatomy. The disposable design eliminates respiratory contaminations of tubing and allows for faster clean up and room turnover. The mask is fully disposable, latex free and PVC free.

Growth for your practice.

According to the National Institute of Health (NIH), approximately 15 percent of the population declines dental treatment due to anxiety. Nitrous oxide with the Safe Sedate nasal mask enables you to sedate your patients and easily perform necessary dental procedures. By helping your patients overcome their general fear of dentistry, you can accomplish more per patient visit and make better use of chair time. A pleasant office visit for your patients means a positive referral, which helps build your practice.



Your local Airgas Puritan Medical Representative:

**The right product. The right location. The right expertise.
You'll find it with Airgas Puritan Medical.**

*For more information visit us
on the web at www.airgas.com,
or call 800-736-6427.*

