

Bag Collection and Sampling Kits (Off-Line)

Exhaled breath samples can be collected in Mylar bags for subsequent nitric oxide (NO) analysis using the Sievers* model 280 or 280i Nitric Oxide Analyzer (NOA). Off-line exhaled NO samples can be easily collected at any location, which is an advantage for situations where the collection site is remote from the Analyzer. The sample is collected with the hand held 'bag filler' into an attached Mylar balloon. The samples contained in the Mylar balloons are transported back to the NOA for analysis many hours after collection. The concentration of the NO in the Mylar bags is stable for 8-12 hours.

Sievers offers two different bag collection systems. Both kits include adapters to permit connection of the bags to the gas sampling package of the NOA for analysis of the samples.

ATS Compliant Bag Collection and Sampling Kit

The American Thoracic Society's (ATS) "Recommendations for Standardized Procedures for the On-Line and Off-Line Measurement of Exhaled Lower Respiratory Nitric Oxide and Nasal Nitric Oxide in Adults and Children"¹ recommends collection of a full vital capacity exhalation at a flow rate of .35 L/sec for off-line exhaled NO.

The ATS Compliant Kit includes:

- One inspiratory filter
- Bag filler with pressure gauge (for exhalation at a constant flow rate)
- Single subject use bacterial/viral filter
- A sterilizable mouthpiece
- Three 12 L Mylar bags

Subjects inhale orally to total lung capacity and immediately exhale (without breathhold) into the device. The resistance of the device is sufficient to elevate the mouth pressure, closing the vellum, and eliminating contamination from nasal NO. Subjects perform a slow vital capacity exhalation at a flow rate of 0.35 L/sec. It is suggested that triplicate samples are taken from each subject, and the average NO concentration from the three samples be used as the measure of the subject's fractional exhaled end tidal concentration (FENO_{0.35}).

Accessories (ATS Compliant Bag Kit)

- Gas Sampling Package CASM 03300-02
- Mylar Bags, 12 L CBAG 01410-01
- Bacterial Filters (cs. of 50) CAFL 01420-01
- Inspiratory Filter CAFL 01410-01
- NOA Calibration Kit CNCK 01400

Bag Collection and Sampling Kit

This kit is used to collect exhaled NO under the same conditions as the ATS recommendation for on-line sampling. This device employs the dead space volume discard technique with subsequent collection of exhaled breath in 1.5 L Mylar bags. Exhaled breath can be collected at flow rates ranging from 50-110 mL/sec.

This kit includes:

- One inspiratory filter
- A low dead space bag filler with stainless steel valve and pressure gauge (for exhalation at a constant flow rate)
- Single subject use bacterial/viral filter
- A sterilizable mouthpiece
- Three 1.5 L Mylar bags

In the open (or out) position, the valve seals the bag to permit inhalation and discards the dead space volume. In the closed (or in) position, the valve permits collection of the exhaled breath in the balloon. The Mylar bags are equipped with a reflux valve that automatically seals the bags when not connected to a luer fitting. Approximately 50-100 mL of exhaled breath is required for analysis and the subjects normally fill two or three bags.

Accessories (Bag Collection and Sampling Kit)

- Gas Sampling Package CASM 03300-02
- Mylar Bags 1.5 L CBAG 01400-01
- Bacterial Filters (cs. of 50) CAFL 01420-01
- Inspiratory Filter CAFL 01410-01
- NOA Calibration Kit CNCK 01400

NOAnalysis Software-Bag Program

Sievers NOAnalysis Software includes four custom pro-grams with data collection for liquid sampling, restricted exhaled breath, breath by breath and bag sampling. The Bag Program is used for data collection following the off-line exhaled breath technique.

Features

- Real-time graphical display
- Adjustable graphical view: zooming, panning, auto-scaling
- Flexible data collection with user-definable input for number of samples per subject and entry of sample ID information while analyzing sample
- Automatic calculation of results with average values calculated for replicate measurements, and results can be printed and stored in Windows file format
- Data storage in tab-delimited text files enabling direct import to spreadsheet or statistic programs

Reference

1. American Journal of Respiratory Critical Care Medicine; Vol. 160: pp 2104-2117; 1999.'

