

AIR SAMPLING Instructions for Clients:

Based on NIOSH Manual of Analytical Methods, 5th Edition, Chapter SA April 2016 Page SA-17 to SA-18 and NIOSH 7303.

Use these instructions for personal sampling inhalable aerosols. These instructions are not intended for respirable aerosol sampling.

- 1.) Calibrate the personal sampling pump with a representative filter in line using a bubble meter or equivalent flow measuring device.
- 2.) Assemble a filter in a cassette filter holder. Support the filter by a cellulose backup pad or stainless steel screen. Close the filter holder to ensure that its parts are aligned evenly. Seal the filter holder with plastic tape or a shrinkable cellulose band.
- 3.) Remove the filter holder plugs and attach the filter holder to the personal sampling pump with a piece of flexible tubing. Position the filter holder in the worker's personal breathing zone, with the sampler inlet pointed downwards.
- 4.) Prepare the field blanks at about the same time as sampling is begun. These field blanks should consist of unused filters and filter holders from the same lot used for sample collection. Handle and ship the field blanks exactly as the samples, but do not draw air through the field blanks. Three field blanks are recommended for each batch of samples.
- 5.) Sample at an accurately known flow rate between 1 and 4 L/min for a total sample size of 200 to 2000 L for Time Weighted Average (TWA) measurements. Set the flow rate as accurately as possible (e.g., within $\pm 5\%$) using a calibrated flowmeter. Take three replicate samples (minimum) are recommended for quality control for each set of field samples.
- 6.) Observe the sampler frequently and terminate sampling at the first evidence of excessive filter loading or change in personal sampling pump flow rate. (It is possible for a filter to become plugged by heavy particulate loading or by the presence of oil mists or other liquids in the air.)
- 7.) Disconnect the filter holder after sampling. Cap the inlet and outlet of the filter holder with plugs. Label the sample. Record pertinent sampling data, including times of beginning and end of sampling, initial and final air temperatures, relative humidity and atmospheric pressure. Record the type of personal sampling pump used and location of the sampler.
- 8.) Drop off or ship the samples to the laboratory as soon as possible in a suitable container designed to prevent damage in transit. In addition to the samples and field blanks, provide at least four unused filters from the same lot for use as media blanks. Complete the client information, billing information, and sample information on the chain of custody form.

Pre-arrangement of a drop off time is recommended (call 250-960-5713 or e-mail nals@unbc.ca). Samples can be submitted 5 days a week. Please call or e-mail in advance to confirm your drop off time or shipping instructions. We are located in room 4-234. There is a 10 minute loading zone at the north end of building 4 that is convenient for picking up and dropping off samples. You can find directions to NALS on Google maps at: <https://goo.gl/mun6v>

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