

Chemical Research Services

SAMPLING PROCEDURE
LIQUID SORBENT FOR ORGANIC SILICON

Equipment Needed:

Gas transfer lines	Gas impingers (gas bubblers) - 2 per sample
Rotameter	Methanol, 50 ml per impinger
Dry test meter (optional)	Ice Bath
Sample shipping bottles - 2 per sample	

- 1) Ascertain that the sample can be obtained at a pressure not exceeding 10 psig and a flow of at least 100 milliliters per minute, and that these conditions can be maintained over the entire sampling period. Pressure- and flow-control devices may be required. The sampling pressure should be kept as low as possible at the specified flow rate. A total flow volume measurement device, such as a dry test meter, can be used to record the exact amounts of gas sampled for more accurate sampling.

Note: Any sampling lines or control devices should be constructed from materials that are inert and non-sorbing. The distance from the sampling point to the sampler should be minimized.

- 2) High density Teflon is preferred for connections downstream of the regulator. Flexible silicone tubing may be used to make short connections to sampling tubes. Any pumps, metering valves, etc. or other flow- and pressure-controlling devices should be located downstream of the impingers if possible.
- 3) Rinse the impingers and connectors (if possible) with a 50 mL aliquot of methanol and collect in a sample shipping bottle for use as a blank.
- 4) For the 125 milliliter borosilicate impingers, adjust the flow controls to establish a constant flow reading between 100 mL/min and 1 L/min on a calibrated rotameter. This will save time when actually setting up the first sorbent tube, and will passivate the sampling system.
- 5) Add 50 ml of methanol to each of the two gas impingers.
- 6) Connect the inlet of one impinger to the outlet of the sample gas. Connect the inlet of the second impinger to the outlet of the first, for a series of two impingers. Immerse the impinger series into the ice bath.
- 7) Flow the sample through the impingers, periodically checking that the flow remains close to the initial flowrate and adjusting it if necessary.
- 8) At the end of the sampling period, record the time and flow data and transfer each impinger solution to separate bottles. Securely attach a label to the bottle, and indicate which bottle of methanol was first in the series and which was second.
- 9) If additional samples are to be taken, thoroughly rinse the impinger set and all tubing with methanol before re-sampling.
- 10) Package the bottles and keep chilled at $4^{\circ}\text{C}\pm 2^{\circ}\text{C}$. Return the samples, all supplied equipment, and sampling data to GTI for analysis.

NOTES: It is the sampler's responsibility to ensure sampling is performed in a safe manner. Neither GTI nor any person acting on behalf of GTI assumes any liability with respect to the use of, or for damages resulting from the use of, any information presented in this procedure.