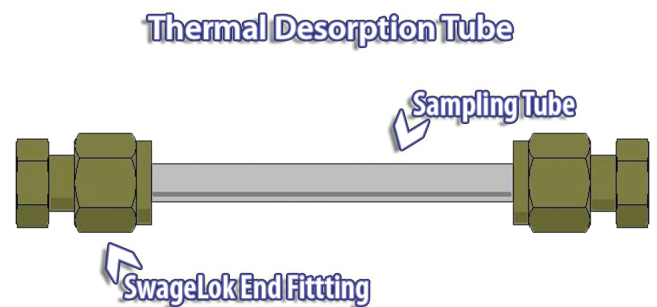


## Volatile Organic Compounds by Thermal Desorption

EPA Method TO-17 is used for the sampling of volatile organic compounds in ambient air using a solid sorbent packed into a tube. The compounds are introduced into a gas chromatograph via thermal desorption, and are then identified and quantified by mass spectrometry. Refer to the method for further details (<http://www.epa.gov/ttn/amtic/files/ambient/airtox/to-17ar.pdf>).

### Equipment

1. Air sampling pump capable of sampling between 20 ml/min to 100 ml/min with the sampling medium in-line.
2. Airflow calibrator (ex., bubble meter, Bios DryCal flow meter, etc.)
3. Thermal desorption tube – preconditioned from laboratory. Tubes may be stored at room temperature prior to use. After sampling, tubes must be stored cold, and must be shipped cold to the laboratory.
4. Field blank - A field blank should be included in the sampling event. Field blanks should be subjected to exactly the same handling as the samples (open, seal, and transport), except that no air is drawn through them.
5. Wrenches – Two adjustable wrenches



### Equipment Ambient and Indoor Sampling Guidelines

**Sampling Flow Rate** - 100 mL/min

**Sampling Time** - approximately 40 minutes

**Air Volume** - 4 L. *Do Not Exceed Maximum Volume.*

For other sources or applications, please consult with lab to determine optimal flow rates and sampling interval.

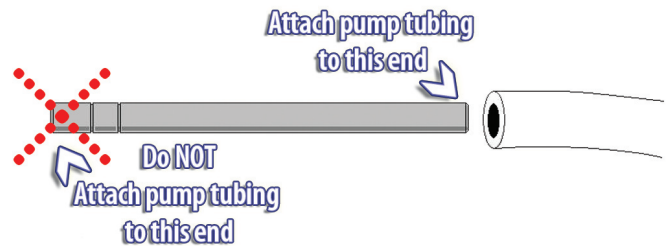
Prior to sampling, allow the tubes to equilibrate to ambient temperature in the packaging in which they arrived from the lab.

## If sampling pump is not received pre-calibrated

- Using an airflow calibrator, calibrate pump with representative media inline, following directions provided from vendor. Use the calibration tube provided from the lab. **Do not use a sample tube.**

## If sampling pump is received pre-calibrated

- Remove the sample tubes from the shipping container.
- Record the serial number for the tube. DO NOT write/scratch any additional information or put labels or tape on the tube.
- Using the adjustable wrenches, remove the two Swagelok fittings from the ends of the tube.
- Locate the end of the sampling tube with the two grooves. This is the INLET, the end through which the sample air will be drawn.
- Place the other end of the tube into the tubing attached to the sampling pump.
- Set up the sampling tube in the sampling location.
- Turn the pump on and note the starting time and date.
- If collecting a field blank, uncap the field blank tube to expose it to field conditions, and then immediately reseal the tube. Place the field blank tube back in the storage container.
- Sample at a known flow rate for the recommended period of time, approximately 40 minutes. **Do not exceed maximum recommended volume of 4 L.**
- At the end of the sampling period, retrieve the sampler, turn the pump off and record the final sampling time.
- Install the Swagelok fitting on each end of the tube. Tighten firmly with wrenches, no more than 1/4 turn past finger tight. **Do not overtighten the fittings.**
- Place the tubes in a clean, plastic tubes (provided), then put the tubes in a ziplock bag.



## Equipment Storage and Shipping Instructions

- Carefully pack sample tubes and field blank in a cooler containing FROZEN blue ice packs. Be sure to include all pertinent information (e.g. sample identification, sampling date, time and sample volume, etc.,) on the Chain of Custody form that is submitted with the samples.
- Ship the cooler to the laboratory using an overnight courier service (FedEx, UPS, etc.). If unable to ship the samples back to the laboratory that day, store the samples in sealed containers at 4° C.