TO-17 Sorbent Tube Sampling using a Pump

Please Read The Following Important Information before Starting

- ***The pumps will generate heat over a 24-hour period, so they should be run with the door open unless noise is a problem.***
- ***Be sure to record the Flow Rate from the Rotometer (or other flow measuring device) and the Time so EAS can calculate the sample volume. Be sure to include the units.***
- ***If you have any questions please call Steve Hoyt at (805) 801-5660***

This procedure covers sampling on all types of sorbent tubes for the EPA TO air methods including TO-17, TO-1, TO-2, and IP-1B. Under the current method designation, TO-17 actually replaces TO-1 and TO-2 by incorporating both into one method that allows selection of any of the commercially available Sorbent tubes.

PROCEDURE

- Selection of Sorbent Tubes and Sampling Times

    - Select a tube and sorbent packing for sample application. This should be done by consulting Table 1 and 2 in EPA TO-17. It is recommended to collect duplicate tubes in case something happens to one tube.

    - Sample volume should be selected based on the type of tube used and the compounds of interest. In all cases an air sample volume of 5 liters should not be exceeded. If the concentrations are expected to be high collect tubes at different volumes to make sure one tube is in calibration range. A good recommended volume for ambient air or indoor air that is expected to be clean is 2 liter.

    - Buy or pack tubes according to methodology described the analytical SOP. For EAS it is preferable to use 1/4" x 3" tubes (either glass or stainless steel), however the EAS desorber can be made to fit any size tube.

    - Tubes will be packed in a container. Keep the tubes in the container with caps on until use. Handle tubes with gloves to avoid

contamination (this is optional since the EAS concentrator does not have gas flow over the outside of the tube).

- **Sampling Collection**

  - Connect the outlet of a pump that is capable of pulling between 100 mL/min and 500 mL/min through the tube to a flow controller, calibrated rotometer, or to some other flow measurement device.

  - Connect the sorbent tube to the inlet of the pump. The connection can be made by using a 1/4" swagelock adapter if necessary or by connecting the sorbent tube directly to the tubing.

  - For the field blank, connect the tube as described above then disconnect the tube, cap and place back in the container. Do not pass any air through the tube.

  - Set the pump for the desired flow rate, and start the pump up and check flow rate. Record data on flow on the Field Data Sheet (FDS), and on the chain of custody form (COC).

  - Sample over the selected period of time, and check the flow rate at the end of the sample period, just before turning off the pump.

  - Turn Pump off and remove tube from pump. Place end caps on tube and tighten, and place tube back in container.

  - Store tubes in a clean environment at 4C. Ship back to EAS in ice chest provided with blue ice.

When Done:

Pack the TO-17 tubes in an airtight container and ship with blue ice in a cooler back to Environmental Analytical Service, Inc.

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