

TO-4 and TO-13 XAD/PUF Cartridge Sampling for Ambient Air

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*

The XAD/FUF Cartridge

- The combination XAD/PUF cartridge can be used for sampling semi-volatile organic compounds in ambient air and gas streams. The combination cartridge can only be used to about 100 C. For higher temperatures contact the lab to get a plain XAD cartridge.
- The sampling methodology for the XAD/PUF cartridge is described in EPA methods TO-10, TO-4, and TO-13. The combination cartridge can be used for pesticides, PAH, phthalates, PCB's, and other SVOC compounds. The combination cartridge sent is for use with pumps with an air volume of 2 to 25 L/min, as described in EPA Method TO-10.
- These "Medium Volume" cartridges can be used with flow rates from 2 to 25 L/min and samples can be collected for up to 48 hours. Some typical situations are listed below. **Remember: the longer you sample the lower the detection limit.**

Sample	Flow (L/min)	Time	Volume
Ambient Air - Low	15 L/min	24 hrs	21 m3
Indoor Air	10 L/min	8 hrs	4.8 m3
Soil Gas	5 L/min	60 min	0.3 m3

- The cartridge has an opening of about 1" on one side, where a filter can be attached for ambient air sampling. The filter is a press fit and is held in place with an "O" ring. To remove the filter, gently rotate the filter and pull the filter off the glass cartridge.

- The other end has a glass tube that is about ¼” in diameter.

Leak Checking the Cartridge

- The cartridges can be leak checked by blocking the opening of the cartridge and checking that the rotometer (flow) drops to zero. (people have been known to just put their hand over the opening of the cartridge)

Collecting a Ambient Air Sample

- Open the zip lock bag and remove the foil wrapped cartridge.
- Unwrap the foil and remove the two red plastic end caps. Save the caps and wrapping to send the cartridge back.
- Connect the ¼” glass tube end of the cartridge to the ¼” Tygon tubing line that comes from the rotometer/pump.
- Place the cartridge is the desired location. Often this might be breathing height. Make sure the cartridge points horizontal so falling particulate matter does not deposit on the filter.
- Record the start time and start up the pump. Adjust the rotometer to get the desired volume. Record the volume.
- Check and record the rotometer flow during the sample event. If the flow has changed readjust to the original value.
- At the end of the event, turn off the pump and record the stop time.
- Wrap the XAD/PUF cartridge and filter with foil and place in a zip lock bag. Label the bag.
- Pack the cartridges in the original cooler with blue ice and ship back to EAS labs. The cartridges have a \$40 value so the package should be insured, since the sampler is responsible for all the equipment until it arrives at EAS. Be sure the Chain-of-Custody is filled out with the desired analysis, contact person, and address the report and billing are to go to.

Collecting a Soil Gas or Source Sample

- Open the zip lock bag and remove the foil wrapped cartridge. Make sure there is no filter on the cartridge.
- Unwrap the foil and remove the two red plastic end caps. Save the caps and wrapping to send the cartridge back.
- Connect the ¼" glass tube end of the cartridge to the sample port or Tube.
- Put the rubber stopper adapter on the large end of the tube can connect it to the rotometer/pump after purging the line.
- Record the start time and start up the pump. Adjust the rotometer to get the desired volume. Record the volume.
- Check and record the rotometer flow during the sample event. If the flow has changed readjust to the original value.
- At the end of the event, turn off the pump and record the stop time.
- Wrap the XAD/PUF cartridge and filter with foil and place in a zip lock bag. Label the bag.
- Pack the cartridges in the original cooler with blue ice and ship back to EAS labs. The cartridges have a \$40 value so the package should be insured, since the sampler is responsible for all the equipment until it arrives at EAS. Be sure the Chain-of-Custody is filled out with the desired analysis, contact person, and address the report and billing are to go to.

When Done:

Place the cartridges in a cooler with blue ice and overnight back to Environmental Analytical Service, Inc.

Environmental Analytical Service, Inc.
173 Cross Street
San Luis Obispo, CA 93401

(805) 781-3585