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Polycyclic Aromatic Hydrocarbons (PAHs) in Ambient Air Using Gas Chromatography/Mass Spectrometry

This modification of EPA Method TO-13A is used for the low volume sampling of PAHs in ambient air using a combination of Polyurethane foam (PUF) and XAD resin packed into a tube. After extraction, the compounds are introduced into a gas chromatograph, 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-13arr.pdf>).

Equipment:

1. Air sampling pump capable of sampling at 5L/min for 4-24 hours with the sampling medium in-line
2. Airflow calibrator (ex., bubble meter, Bios DryCal flow meter, etc.)
3. PUF/XAD tube – preconditioned from laboratory

Tubes may be stored wrapped in aluminum foil at ambient 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.

Sampling Guide:

Sampling Flow Rate - 1-5L/min

Air Volume - up to 7200L for ambient and indoor air. **Do Not Exceed Maximum Volume.**

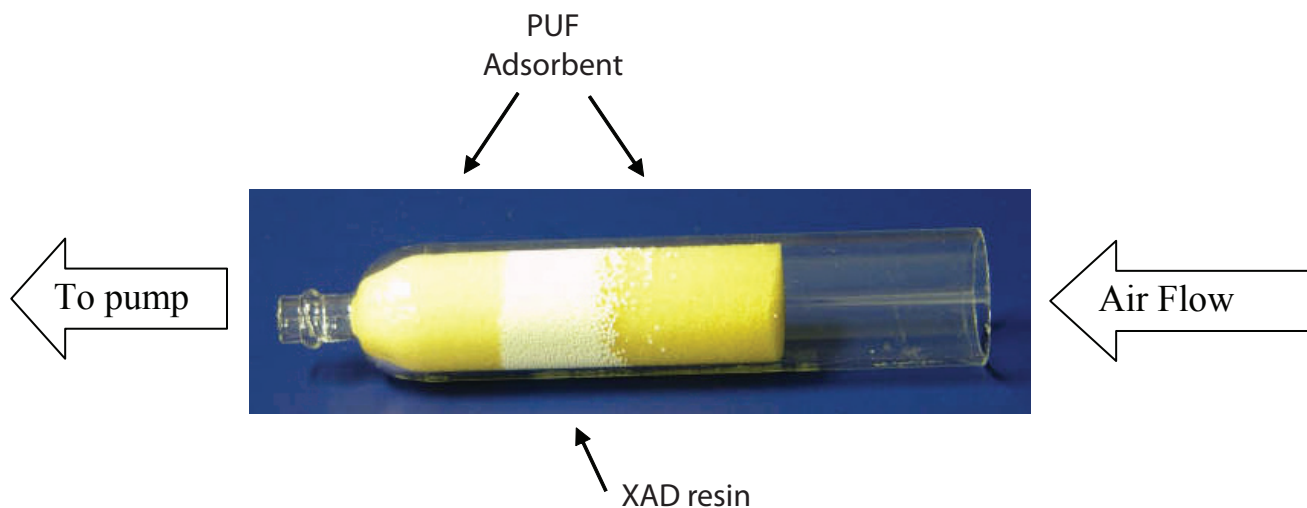
Sample Time – maximum of 24 hours

If sampling pump is not received pre-calibrated:

1. 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:

1. Remove the sample tubes from the shipping container.
2. Unwrap the cartridge from the aluminum foil. **DO NOT write/scratch any additional information or put labels or tape on the tube.**



3. Locate the thin end of the sampling tube. Place the thin end of the tube into the flexible tubing attached to the sampling pump.
4. Set up the sampling tube in the sampling location.
5. Turn the pump on and note the starting time and date.
6. If collecting a field blank, unwrap the field blank tube to expose it to field conditions, and then immediately rewrap the tube. Place the field blank tube back in the storage container.
7. Sample at a known flow rate for the recommended period of time, approximately 4-24 hours. ***Do not exceed maximum recommended volume of 7200L.***
8. At the end of the sampling period, retrieve the sampler, turn the pump off and record the final sampling time.
9. Rewrap all samples with aluminum foil. Label the wrapped tubes with the sampling information (sample identification, sample date, etc.) by affixing a label to the outside of the aluminum foil.
10. Place the tubes in a clean, opaque, airtight container.

Storage & Shipping Instructions:

1. 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.
2. 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 in a solvent-free refrigerator.

Contact Information:

2655 Park Center Drive, Suite A
Simi Valley, California 93065

805.526.7161
805.526.7270 (fax)

