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Carboxylic Acids in Ambient Air Using Gas Chromatography/Mass Spectrometry

This in house developed method is used for the sampling of odorous carboxylic acids (a.k.a. volatile fatty acids) in ambient air using a specially prepared sorbent tube. After extraction, the compounds are introduced into a gas chromatograph and are then identified and quantified by mass spectrometry. Please contact the laboratory for additional analytical information.

Equipment and Consumables:

1. Air sampling pump capable of sampling at 1L/min for 100 minutes with the sampling medium in-line
2. Airflow calibrator (ex., bubble meter, Bios DryCal flow meter, etc.)
3. Sorbent tube – commercially available from SKC, laboratory will provide upon request

Tubes may be stored at ambient temperature prior to use. After sampling, samples may be stored and shipped at ambient temperature 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 L/min

Air Volume – 100L for ambient and indoor air. **Do Not Exceed Maximum Volume.**

Sample Time –100 minutes

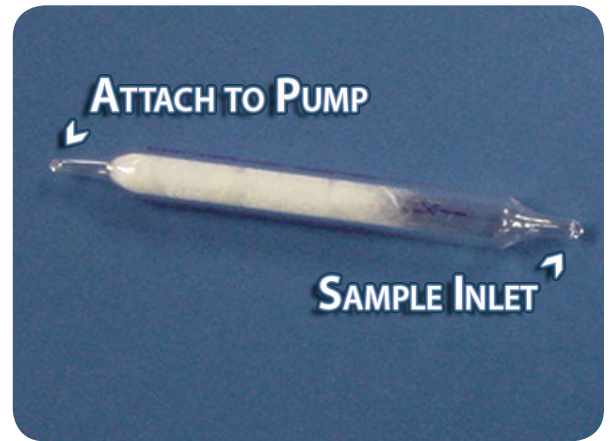
If sampling pump is not received pre-calibrated:

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. **DO NOT write/scratch** any additional information on the tube.

3. The airflow direction will be printed on the SKC tube in the form of a directional arrow. Ensure that the arrow points towards the pump.
4. Clip both ends of the SKC tube to allow air flow to pass through the tube. Place the end of the tube into the tubing attached to the sampling pump, ensuring that the arrow is still pointing towards the pump.
5. Set up the sampling tube in the sampling location.
6. Turn the pump on and note the starting time and date.
7. If collecting a field blank, clip the ends of the field blank tube to expose it to field conditions, and then immediately recap the tube with the red end caps provided. Place the field blank tube aside.
8. Sample at a known flow rate for the recommended period of time, approximately 100 minutes. **Do not exceed maximum recommended volume of 100L.**
9. At the end of the sampling period, retrieve the sampler, turn the pump off and record the final sampling time.
10. Recap all samples with the red end caps. Label the tubes with the sampling information (sample identification, sample date, etc.) by affixing a label to the outside of the tube and/or labeling a small Ziploc bag containing the tube.



Storage and Shipping Instructions:

1. Carefully pack sample tubes and field blank in a cooler or small box. Ice may be used but is not necessary. 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 away from any potential sources of contamination.

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