

Testing for Polychlorinated Dibenzop-Dioxins and Dibenzofurans in Ambient Air by EPA Method TO-9A

Method Overview

Method TO9A provides procedures for the sampling, detection and quantitative measurement of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans (tetra through octa) in ambient air samples collected by high volume sampler equipped with a quartz-fiber filter and polyurethane foam (PUF) cartridge. The analysis calls for the use of high-resolution gas chromatography/ high-resolution mass spectrometry (HRGCMS) on purified sample extracts. Method TO9A is normally utilized in a perimeter or fence line monitoring mode around incinerators, chemical production facilities or Superfund sites, in support of the Clean Air Act (CAA).

Method Detection Limits

Actual detection limits achieved by method TO9A will vary according to the sample matrix, run time, and by homologue group. For detailed information on the complete analyte list and current MDL studies please review the Method Detection Limits tables provided by Pace Analytical. The reporting limits for the method are as indicated below:

Homologue Group	Air (pg/sample)	Air (pg/m ³)*
Tetra	10	0.03
Penta, Hepta, Hexa	50	0.15
Octa	100	0.30

*Based upon 325m³ sampled.

Method Specifications

Holding Times:	Extracted within 7 days Analyzed within 45 days
Method Turnaround (TAT):	21 Calendar Days
Method QAQC:	- Labeled internal standard recoveries are routinely monitored to insure data quality and method compliance. - Lab Blanks – 1 per 20 samples.

Method Sampling Guide

The complexity of this method is such that only experienced, trained personnel should perform sampling operations. Sampling includes calibration of the high volume sampler, installation of the PUF and filter and subsequent operation of the sampler, usually for 24 hours, to sample 325 to 400m³ ambient air. Pace Analytical will provide appropriate sampling filter and the prespiked PUF cartridge upon request. The PUF cartridge and glass housing should be carefully packed in accordance with the method to avoid contamination or breakage and shipped via overnight carrier, chilled to 4°C (39°F). Include completed chain of custody document.