

Comparison of Formaldehyde Testing Methods

Prism has been working hard to continue to expand our services. We recently completed comparison testing of our thermal desorption tube (TDT) formaldehyde method with the silica gel tube DNPH method (EPA Method TO-11A). The comparison included analyzing Laboratory Control Spikes (LCS) and replicate air samples using both methods. The DNPH samples were analyzed by an independent laboratory.

Results for the LCS samples spanning a typical formaldehyde concentration range were within $\pm 10\%$ relative error for both methods (results not shown). The results for replicate air samples are summarized in the Table below. These results were obtained from the same testing location using five pumps and five tubes and were collected simultaneously.

Sample	Volume	Prism TDT	DNPH silica gel tube
Air Sample #1	6.6 L	64 ng/L	
Air Sample #2	5.8 L	62 ng/L	
Air Sample #3	6.6 L	65 ng/L	
Air Sample #4	9.6 L		64 ng/L
Air Sample #5	7.0 L		54 ng/L
Average		63.7 ng/L	59 ng/L
RSD		$\pm 2\%$	$\pm 8\%$

These results show an excellent correlation between the two methods. Other procedural comparisons between the two methods are shown here:

	Prism	DNPH
Media	TDT	DNPH silica gel cartridge
Sample Time	20-30 min	Variable; depends on flow rate
Sample flow rate	0.2 L/min	0.1 – 2.0 L/min
Shipping	1-2 Day Standard Shipping	Chilled Overnight

Prism's TDT method for formaldehyde testing has quick and simple sampling where the TDT tubes can be shipped via standard mail and do not need to be stored/shipped in a chilled container. These features along with the excellent correlation to the DNPH method combine to solidify Prism's TDT testing method as a convenient, affordable, and accurate testing method for formaldehyde determination.

About Prism Analytical Technologies, Inc.

Prism Analytical Technologies, Inc. is a leading consultative air testing laboratory in the United States that is devoted to the chemical identification and analysis of contaminants in the air. We are a recognized leader in the development and deployment of ambient air testing methodologies for Fortune 100 and 500 companies, industrial hygienists, and environmental consultants. Prism's science-based technologies and wide range of air testing support help clients solve indoor air quality, process control, industrial, and environmental challenges.