

TECHNICAL BULLETIN

Collection of Wipe Samples for the Determination of Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans

Application Overview

Surface wipe samples are often collected as a source of information on levels of contamination that may be present before, during or after remediation work. This type of sample is often used to determine if goals for site clean-up have been achieved and to determine if equipment can be safely transported off of the work site. Wipe samples can also be used to determine disposal routes for waste materials, and are frequently called for during the decontamination process, after fires involving hazardous materials. Several analytical approaches can be taken, depending upon the specific compound(s) of interest and the detection limit requirements. Typically the procedure involves wiping the surface in question with a solvent saturated material which is then shipped to the laboratory for analysis.

Detection/Reporting Limits

Several analytical variations are available to meet a variety of assessment needs. The size of the surface to be tested along with the analytical method can be adapted to meet the action limits of the project. The following table summarizes reporting limits based on the application of these options:

Homologue Group Wipe area (detection units)	8290		8280	
	1 m ² (ng/m ²)	100 cm ² (ng/m ²)	1 m ² (ng/m ²)	100 cm ² (ng/m ²)
Tetra	0.01	1.0	10	1000
Penta, Hepta, Hexa	0.05	5.0	25	2500
Octa	0.10	10.0	50	5000

Sampling Guidelines

Site specific safety requirements must be followed at all times. At a minimum, gloves capable of stopping solvent transmission shall be worn during sample collection. Respiratory apparatus is recommended when collecting dust, ash, etc. samples which might easily become airborne. Additional safety apparatus may be necessary dependent upon the location and materials being collected. Consult with the site health and safety officer for details. The following information is a general summary only, consult NIOSH, OSHA or similar documentation for more complete sampling guidelines.

Mark off a 100 cm² area (or 1 m²) of the surface to be tested. Use one clean, pre-wetted (hexane) swab to wipe the surface in one direction and then in a perpendicular direction. (four wipes are typically used to wipe a 1 m² area) For personal safety, tongs may be used to hold the wipes when sampling. Transfer the used wipe into the original amber glass jar for submission to the laboratory and securely replace the cap on the jar. Pace Analytical will provide appropriate wipe sample kits upon request. Ship samples via overnight carrier, chilled to 4°C (39°F). Include completed chain of custody document.