

Technical Bulletin: Composite Dust Wipe Samples

The purpose of this technical bulletin is to provide guidance on composite dust wipe samples for lead-based paint professionals through a question and answer format. Currently EPA's program to recognize laboratories for proficiency in lead testing for paint, dust, and soil samples, the National Lead Laboratory Accreditation Program (NLLAP), does not contain components for composite dust wipe samples. EPA is committed to resolving the outstanding issues and to adding components to NLLAP in order to recognize laboratories that can proficiently analyze composite dust wipe samples. This bulletin describes guidance for lead professionals until these issues are resolved.

What is a composite dust wipe sample?

A composite dust wipe sample is a combination of two or more individual dust wipe samples that are analyzed together in a laboratory to obtain a single result. In the case of a lead loading measurement, where all individual samples are collected from the same size area, this single measurement is equivalent to the average of the analytical results for the individual samples.

What are the advantages of composite dust wipe samples?

The primary advantage of composite dust samples is to potentially reduce costs by requiring fewer laboratory analyses. Alternatively, for a fixed cost, composite samples can potentially cover more area than individual samples.

What are the disadvantages of composite dust wipe samples?

The disadvantages are: 1) information is not available for each location from which samples were collected; 2) high levels of lead can be diluted (although individual levels would be averaged in most cases in a risk assessment or lead hazard screen); 3) the laboratory analysis is more difficult because of the extra wipes that are analyzed together.

Do EPA regulations allow composite dust wipe samples?

Yes. EPA's regulation in response to Section 402 of Title IV of the Toxic Substances Control Act, 40 CFR Part 745.227(g), expressly permits composite dust wipe samples for risk assessments and clearance testing. Moreover, the part of the regulation on lead hazard screens, 40 CFR Part 745.227(c), relies heavily on composite dust wipes. The regulation states that only one type of component (uncarpeted floor, window sill, or window trough) shall be included in a composite sample. EPA also recommends that no more than four regular wipe samples be included in a composite sample unless the laboratory analyzing the sample agrees to accept composite samples with more than four regular wipe samples and is capable of accurately analyzing these samples.

Why did EPA decide to allow composite dust wipe samples?

Prior to the publication of the regulation in 40 CFR Part 745, EPA conducted a laboratory study of the feasibility of protocols for analyzing composite dust wipe samples. One of the protocols, a modification of EPA SW-846 Method 3050A, was successfully implemented in the laboratory for as many as four regular wipe samples. Another protocol, from outside of EPA, was successful under

certain circumstances. Hence, EPA concluded that the analysis of composite dust wipe samples was feasible. In the interest of not impeding technical progress and in allowing greater representativeness and/or potential cost savings for testing, EPA allowed composite dust wipe samples in its regulation in 40 CFR Part 745, with the provision that only one type of component (e.g., uncarpeted floor, window sill, etc.) could be included in any one composite sample.

How can I get a copy of the EPA study of composite dust wipe samples?

Call the National Lead Information Center at 1-800-424-LEAD and request a copy of the report entitled "Analysis of Composite Wipe Samples for Lead Content." The EPA report number is 747-R-96-003.

A copy of the report is also available from the EPA Lead Home Page at the Internet address: <http://www.epa.gov/lead>. Look under the subheading "Technical Reports and Scientific Studies on Lead." The report is in PDF format in this subheading. A copy of Acrobat Reader (available by free download from <http://www.adobe.com>) will be necessary to view the report.

The May/June 1999 issue of the American Industrial Hygiene Association Journal includes an article on the EPA Study and its results. The reference is: American Industrial Hygiene Association Journal, Vol. 60, No. 3, pages 326-333.

Where can I get a copy of the protocols used in the EPA study?

The EPA Study report includes the laboratory protocols in the appendices.

Do any states or local governments have regulations about composite wipe samples?

They might. You should check with your state or local government.

How can a testing professional select a laboratory for analyzing composite dust wipe samples?

- (1) Select a laboratory that is recognized by the EPA National Lead Laboratory Accreditation Program (NLLAP) as proficient for single sample dust wipe analysis.
- (2) Ask if the laboratory analyzes composite dust wipe samples.
- (3) If the answer is yes, ask for evidence that the laboratory can in fact perform the analysis with acceptable performance for the maximum number of regular wipe samples that will be collected and composited.
- (4) Ask if the laboratory includes composite quality control samples (comprised of the appropriate number of regular wipe samples) with each batch. The answer should be yes. Make sure you will receive the results of the composite quality control samples so you can assess the performance of the laboratory on the composite samples you send to them.

What should I look for in the future?

In calendar year 2000, EPA will be finalizing a regulation on hazardous levels of lead in response to Section 403 of Title IV of the Toxic Substances Control Act. This regulation may contain rules for interpreting the results of composite dust wipe samples.