United States
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National Risk Management
Research Laboratory
Research Triangle Park, NC 27711

Research and Development

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Project Summary

Interlaboratory Study of a Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products

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The full report describes results of an interlaboratory study to estimate repeatability (precision of analyses performed by a single laboratory) and reproducibility (precision analyses performed by different laboratories) of a consumer products volatile organic compound (VOC) measurement method based on EPA Method 24 (for VOCs in surface coatings). (NOTE: Consumer products are significant sources of VOCs, which are precursors to the formation of ozone in photochemical smog.)

This Project Summary was developed by EPA's National Risk Management Research Laboratory's Air Pollution Prevention and Control Division, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Overview

The Clean Air Act Amendments of 1990 require the reduction of VOC emissions in consumer products, which have been identified as a "major" source and will be subject to future regulations. Since EPA has no established method for determining VOC content in consumer products, this study focused on achieving that goal. EPA Method 24 has been modified so that it is viable for measurement of VOC in consumer products. The interlaboratory study examines the precision of the modified EPA Method 24, used for analysis of VOC content in consumer products, with that of EPA Method 24, used for determining VOC content in paints and coatings. As a result of the study, further modifications were made. As anticipated, dense foams were difficult to analyze; therefore, this category of consumer products was not included in the interlaboratory study.

The mean method repeatability was found to be 2.7 weight percent VOC, and the mean method reproducibility was found to be 4.8 weight percent VOC. Method repeatability ranged from 0.2 to 4.4 weight percent VOC, and reproducibility ranged from 0.6 to 11.9 weight percent VOC. The precision of the consumer products VOC method for consumer product samples is similar to that of EPA Method 24 applied to surface coatings. Results show that the consumer products VOC method is suitable for analyzing the volatile content of a wide variety of consumer products.

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The complete report, entitled "Interlaboratory Study of a Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products," (Order No. PB96-121652; Cost: $27.00, subject to change) will be available only from:
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5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650
The EPA Project Officer can be contacted at:
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