

## Development of a New House Dust Standard Reference Material for the Determination of Organic Contaminants

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A new Standard Reference Material (SRM) is available for the determination of organic contaminants. SRM 2585, House Dust, consists of actual house dust and is intended for use in evaluating analytical methods for the determination of selected polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyl (PCB) congeners, chlorinated pesticides, and polybrominateddiphenyl ether (PBDE) congeners in house dust and similar matrices. All of the constituents for which certified, reference, and information values are provided in SRM 2585 were naturally present in the dust material before processing. A unit of SRM 2585 consists of one bottle containing approximately 10 g of dust. The dust used for the preparation SRM 2585 was taken from vacuum cleaner bags collected from homes, cleaning services, motels, and hotels located in several U.S. states during 1993 and 1994. The material was collected at the same time and from the same locations as the dust used for the preparation two complementary dust SRMs: SRM 2583 (Trace Elements in Indoor Dust, Nominal 90 mg/kg Lead and SRM 2584 (Trace Elements in Indoor Dust, Nominal 1 % Lead). The bottled SRM 2585 material has been analyzed using multiple methods of analysis to provide a range of certified and reference values for organic contaminants. Specifically, certified values for concentrations, expressed as mass fractions, for 34 PAHs, 30 PCB congeners, 4 chlorinated pesticides, and 15 PBDE congeners are provided for the material. Reference values for concentrations, expressed as mass fractions, are provided for 29 additional PAHs (some in combination), 13 additional PCB congeners, 9 additional chlorinated pesticides, and 3 additional PBDE congeners. Additional information values, expressed as mass fractions, are provided for 9 additional PBDE congeners.

The characterization of the organic contaminant content of SRM 2585 is presented in this paper with a discussion of the approach used for the certification of organic contaminant concentrations. The concentrations of PAHs and alkyl-PAHs will be compared to those determined in other particle-related SRMs including SRM 1649a, Urban Dust. Several higher molecular mass PAHs (300 and 302) have been determined in SRM 2585 using multiple, selectively different, gas chromatographic columns. These measurements will be reviewed and compared to those determined in related environmental SRMs, including a coal tar extract (SRM 1597).