

Flame Retardants

PBDE Analysis by HRGC/MS

Polybrominated diphenyl ethers (PBDEs) are part of the larger family of compounds commonly referred to as brominated flame retardants. These compounds have been used extensively for several decades to improve the flame resistance of common household products including: carpeting, seat cushions, drapery material and consumer electronics like computers and televisions. We have lived in close proximity to these chemical products for some time, and they have provided a valuable, life-saving function—protecting us from fire in our homes and workplaces. Because of their valuable properties, the use of these chemicals has increased significantly in the United States over the past several years. Unfortunately, a number of recent research studies have indicated that these PBDE compounds are persistent and bioaccumulating in the environment. Such compounds have been linked to adverse health effects that pose a potential risk to both animals and the human population.

To better assess these risks, the EPA has developed and promulgated method 1614 which is capable of determining and quantifying the presence of 49 PBDE compounds in common environmental and food supply matrices. Pace Analytical has been performing this method since early 2005 and has current experience in a range of matrices. Method 1614 is based upon the isotope dilution analytical techniques used for dioxin/furan analysis by HRGC/MS, and for the Pace Minneapolis Laboratory this is a natural extension of their dioxin experience and expertise. Pace Analytical supports the growing list of toxic, bioaccumulative compounds like PBDEs with significant instrument capacity, an experienced scientific staff, certifications to perform the work, and a proven quality assurance program.

Sample Matrices

- Soil
- Sediment
- Sludge
- Water
- Air
- Tissue

Testing Capabilities

- USEPA Method 1614
- 49 PBDE Compounds or subsets

Instrumentation

- 2-HRGC/HRMS - Autospec Ultima, High Resolution Mass Spectrometers
- 3-HRGC/HRMS - VG Autospec, High Resolution Mass Spectrometers

Certifications

- USEPA
- NELAC
- Multiple States



The Autospec Ultima HRGCMS by Micromass can quantitate Polybrominated Diphenyl Ethers in a variety of matrices to part-per-trillion (ppt) levels.

For more information about Pace Analytical's PBDE testing capabilities, please contact our Specialty Services group at the Minnesota lab: (612) 607-1700 or email SAS@pacelabs.com



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