

Meet Berkeley Analytical Associates

Berkeley Analytical Associates (BAA) is an indoor air quality chemistry laboratory specializing in the analysis of airborne organic compounds. They use large and small environmental chambers to measure chemical emissions from building materials, architectural finishes, and furniture. BAA conducts indoor air chemistry research to advance product performance and reduce chemical risks to human health and the environment.

BAA has a full range of environmental chamber facilities used for VOC emission testing. These facilities include a battery of small-scale (67-liter) chambers that are used for testing building products that can be represented by relatively small pieces. Two chambers the size of small rooms (6 cubic meters) are used for larger, more complex products such as components of office furniture systems and seating. For both types of products, BAA provides manufacturers with clear instructions regarding scheduling and the collection, handling, shipping and documentation of product samples so that valid test results are obtained.

The chambers are operated at standard, controlled conditions of ventilation rate, temperature, and relative humidity in accordance with standard test methods and practices. Air samples for VOCs and aldehydes, such as formaldehyde, are collected from the chambers at specific time intervals. These are analyzed in a state-of-the-art laboratory by thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) and High Performance Liquid Chromatography (HPLC). Chamber concentrations of VOCs of concern are determined from these results and then are used to calculate VOC emission rates and emission factors, i.e., the mass of a VOC emitted per unit area of product per hour.

A number of the available specification and certification programs have established criteria that evaluate a product based on its potential Indoor Air Quality impact in a typical environment such as an office or a school classroom. This evaluation is accomplished using a steady-state mass balance model that computes a room air concentration based on the flow rate of fresh air into the space, the surface area or amount of the product in the space, and the product's VOC emission factors. This predicted VOC concentration is then compared to the criteria to ascertain the acceptability of a product's potential impact.

All of the test information – the methods used, the chamber VOC concentrations, the VOC emission factors, the predicted VOC room air concentrations, and the comparison with the criteria – are included in BAA's test reports so the manufacturer has a clear understanding of the process and the results. These results are backed up by a well-designed quality program that includes industry round-robin participation, performance tests programs for analyses, certification of measurement devices, extensive replication of tests and analyses, and audits.

For more information, visit BAA's website at:
www.berkeleyanalytical.com



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