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TPCH Recommends Test Methods to Detect Lead in Glass Containers *Imported Wine Bottles May Violate State Laws*

The Toxics in Packaging Clearinghouse (TPCH) released a [report](#) this week with [recommendations](#) for testing glass containers for compliance with state toxics in packaging laws. “Sample preparation methods must be sufficiently aggressive to liberate lead from glass in order to properly measure true metals concentration in glass for compliance with state laws,” according to Ron Ohta, a senior scientist with the California Department of Toxic Substances Control (DTSC.)

TPCH sent glass samples containing known concentrations of lead to nine commercial laboratories in the U.S. and one laboratory in Europe for testing. The results indicated that U.S Environmental Protection Agency SW-846 Method 3052, *Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices*, and comparable sample preparation methods using hydrofluoric acid (HF) for silica-based materials like glass were effective in determining total lead content. Methods using HF without the application of an external heat source such as microwave, oven bomb or hot plate did not perform as well.

“Some testing laboratories are using EPA Method 3050B, which is a sample preparation method intended to measure ‘total recoverable metals’ or leachable metals. This test method is inadequate in determining compliance with state toxics in packaging laws, emphasizes Alex Stone, Senior Chemist in the Washington State Department of Ecology. “Laboratories using this method – which was developed for detecting leachable metals in soil samples – failed to detect any lead in the glass samples.”

Alternative to destructive testing methods

TPCH and its member states also promote the use of x-ray fluorescent (XRF) spectroscopy for screening glass matrix samples for compliance with state toxics in packaging laws in the [guidance](#) released this week in conjunction with the research [report](#). XRF spectroscopy offers an alternative to

EPA Method 3052 and the use of HF and provides for non-destructive analysis of metals in glass matrices.

Some imported wine bottles found to be non-compliant

Recent XRF screening of glass bottles by TPCH indicated that some wine bottles may exceed allowable levels of lead in packaging. State toxics in packaging laws prohibit the sale and distribution of packaging with greater than a total of 100 ppm four metals – lead, cadmium, mercury, and hexavalent chromium – combined. Some green wine bottles originating in South America and Europe were found by TPCH to exceed the 100 ppm regulatory limit.

“Importers and distributors of wine should be monitoring bottles for compliance with state toxic in packaging laws”, stated TPCH Chair David Westcott of the Connecticut Department of Energy and Environmental Protection. “Companies should ask their suppliers to provide a certificate of compliance for bottles or have bottles tested here in the U.S. for compliance with state laws. A small investment in testing will be less costly than removing wine bottles from retail shelves and the resultant damage to their brand.”

The TPCH periodically screens various types of packaging for compliance with state toxics in packaging laws and provides guidance on appropriate test methods. The recent test method evaluation for glass packaging was funded by the California DTSC through a contract with the Northeast Recycling Council Inc. (NERC), the administrator of the TPCH. The report, *Glass Matrix Test Methods Evaluation for Toxics in Packaging*, is available for download from the TPCH website at www.toxicsinpackaging.org. The newly released *Guidance on Analysis of Glass Matrices for Toxics in Packaging* is also available.

Nineteen U.S. states, including California, have toxics in packaging laws that prohibit the intentional use and restrict the total concentration of four metals – lead, cadmium, mercury and hexavalent chromium – in packaging. These laws were intended to reduce the amount of heavy metals in recycling and municipal solid waste streams and were not intended to address other public health issues such as food safety.