

For LabSolutions™ LCMS

LC/MS/MS Method Package for Restricted Chemicals in Textiles



LCMS-8060

Various restricted chemicals in textiles can be detected.

In recent years, while many issues have been raised related to food safety and the environment, the safety of textiles, which are indispensable for everyday life, has become a particular concern. Countries throughout the world, and especially in the EU, are regulating and investigating hazardous chemicals in textiles. Additionally, regulations have been tightened with respect to hazardous chemicals in textiles. This includes the adoption of the OEKO-TEX® Standard 100, a globally consolidated, independent examination and authentication system for textiles, and the implementation of voluntary regulations by various manufacturers. In addition to the currently regulated components, this method package provides analysis methods covering the major compounds in the OEKO-TEX® Standard 100 and voluntary regulations by various manufacturers.

- **Certain Aromatic Amines: 24 compounds**

This contains MRM information on 24 compounds, consisting of 2,4-xylidine and 2,6-xylidine in addition to 22 compounds targeted by regulations in the EU. It covers compounds targeted by regulations in a variety of countries including China and Japan.

- **Azo Dyes: 44 compounds**

This targets compounds that are listed in the OEKO-TEX® Standard 100 and other regulations as carcinogenic dyes and allergic dyes. Additionally, it covers 27 compounds noted in EU Directive 2009/567/EC.

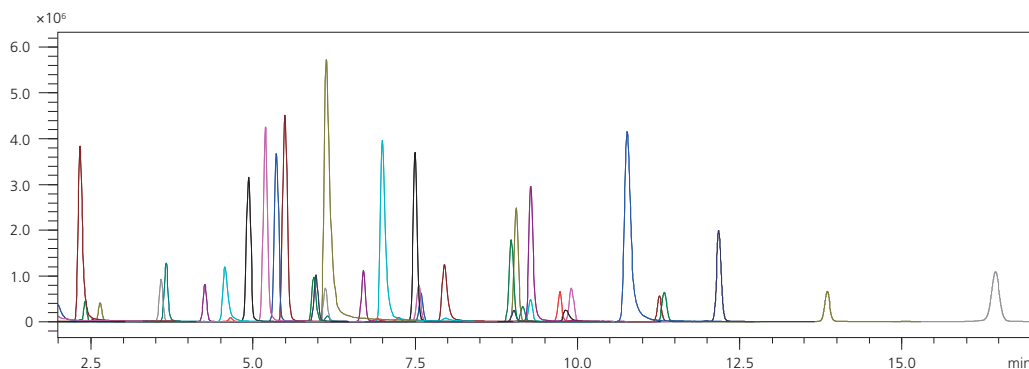
- **Perfluoro Compounds: 24 compounds**

This targets PFOS and PFOA, which are included in the regulations, as well as their related salts, and even perfluoro compounds that are not included in the regulations at present.

- **Alkylphenol Ethoxylate (APEO): 2 compounds**

Alkylphenol (AP): 4 compounds

This covers 2 compounds—nonylphenol ethoxylate and octylphenol ethoxylate, listed in ISO18254, and the 4 main alkylphenols.



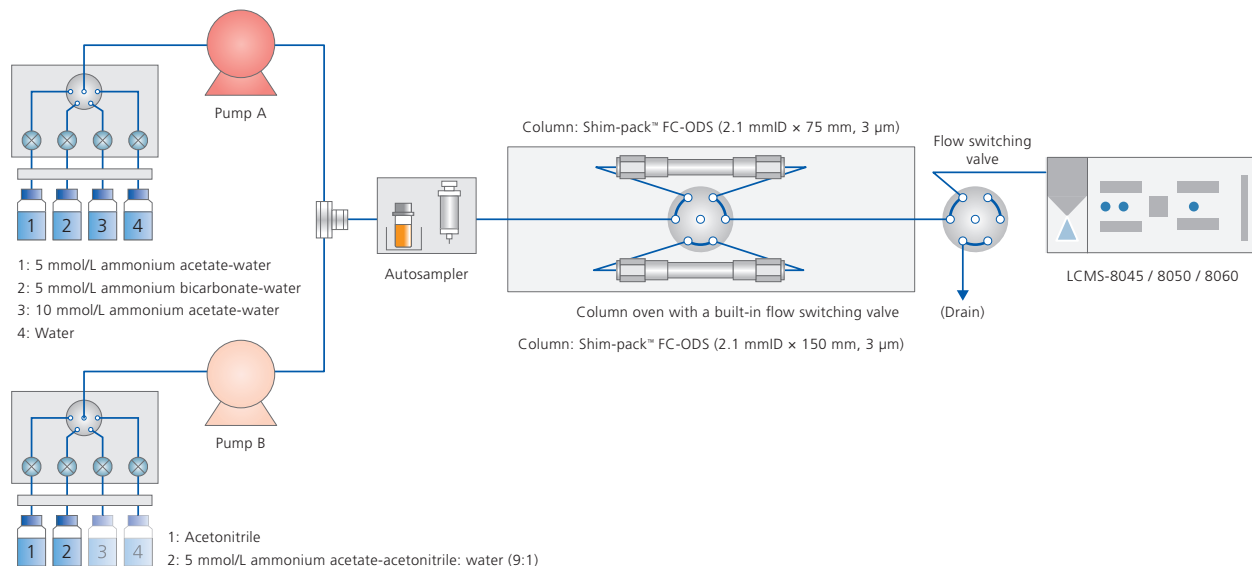
MRM Chromatograms for Azo Dyes

LC/MS/MS Method Package for Restricted Chemicals in Textiles

Shared Analytical Columns

This method package contains 6 methods. A shared column is used for the 5 analyses, excluding the certain aromatic amines. Additionally, the mobile phases are shared as much as possible, with 4 aqueous solvents and 2 organic solvents. As shown in the figure below, introducing a column switching system enables the analysis of all the components targeted by this product, just by changing the combination of the mobile phase and column.

Example of a System Configuration Using Column Switching



Overview of the Methods Contained in This Method Package

	Method 1	Method 2	Method 3	Method 4	Method 5	Method 6
Target Compounds	24 certain aromatic amines	44 azo dyes	7 azo dyes	24 perfluoro compounds	2 APEOs	4 APs
Column	Shim-pack FC-ODS (2.1 mmID × 150 mm, 3 μm)	Shim-pack FC-ODS (2.1 mmID × 75 mm, 3 μm)	Shim-pack FC-ODS (2.1 mmID × 75 mm, 3 μm)	Shim-pack FC-ODS (2.1 mmID × 75 mm, 3 μm)	Shim-pack FC-ODS (2.1 mmID × 75 mm, 3 μm)	Shim-pack FC-ODS (2.1 mmID × 75 mm, 3 μm)
Mobile Phase A	5 mmol/L ammonium acetate-water	5 mmol/L ammonium acetate-water	5 mmol/L ammonium bicarbonate-water	5 mmol/L ammonium acetate-water	10 mmol/L ammonium acetate-water	Water
Mobile Phase B	Acetonitrile	5 mmol/L ammonium acetate-acetonitrile: water (9:1)	Acetonitrile	Acetonitrile	Acetonitrile	Acetonitrile
Run Time	13 min	20 min	10 min	13 min	7 min	11 min

Precautions

LabSolutions LCMS Ver. 5.93 or later is required.

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