

Mass Spectrometry Structural Analysis of Fluoroelastomers

BioChromato Inc.

has published a report describing how their ionRocket sample preparation device, used in combination with Direct Analysis in Real Time Mass Spectrometry (DART-MS) and Kendrick Mass Defect (KMD) analysis, provides a valuable new tool for chain analysis of fluoroelastomers.



Because of their excellent heat,

chemical and abrasion resistance - fluoropolymers are widely used in automotive parts and many other industrial products. Since copolymerization and chain end modification are used to achieve high polymer functionality, structural analysis is important for product development and to understand how a fluoropolymer might degrade.

However, using traditional techniques

such as Pyrolysis GC/MS only information on the constituent monomers can be obtained. Similarly, it has been found to be very difficult to obtain MALDI-MS spectra from fluoropolymers. Fluoropolymers are one class of materials that, to date, have proven difficult to structurally analyse.

The ionRocket

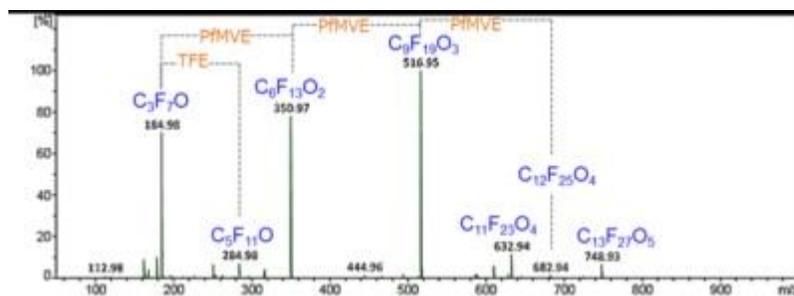
is a temperature-heating device for direct thermal desorption and pyrolysis of samples, prior to ionization and analysis by mass spectrometry. Using ionRocket a temperature gradient from ambient up to 600°C can be achieved in just a few minutes. This enables fluoropolymers to be pyrolyzed and then introduced into the DART-MS gas stream.

The report

shows how the ion-Rocket DART-MS technique can be used to detect the pyrolysis products of fluoroelastomers from low to high molecular weight. This unique capability allows the technique to be applied to the chain analysis of fluoroelastomers. In addition, by using KMD analysis, the detected pyrolysis components can be understood relatively easily.

To read the application report in

full please visit <https://biochromato.com/wp-content/uploads/EI-046-Structural-Analysis-of-Fluoroelastomer-Chain-Analysis.pdf>. For further information on the ionRocket please visit <https://biochromato.com/analyticalinstruments/ionrocket/> or contact BioChromato Inc. on +81-466-23-8382 / europa@bcr.co.jp / northamerica@bcr.co.jp and enquiries@bcr.co.jp.

**BioChromato Inc**

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