Environmental

Rapidly Analyze a Wide Range of Glycol Ethers by GC-MS Using the New Rxi®-1301Sil MS Column

Chromatographic conditions were developed for a fast GC-MS glycol ether analysis on the Rxi®-1301Sil MS column. This column provides better resolution and faster run times than the thick film cyanopropylphenyl-type columns commonly used for speciation of the glycol ethers.

Combined Determination of 1,4-Dioxane and Nitrosamine Contaminants in Drinking Water

Typically, 1,4-dioxane and nitrosamines are analyzed in drinking water following separate extraction and analysis procedures, such as Methods 521 and 522. However, here we present a combined method that uses large volume splitless injection and GC-MS (SIM) to meet low part-per-trillion detection limits for these compounds in a fraction of the time required when running separate methods.

Helium, Hydrogen, or Nitrogen—The Choice is Yours: Unique Rtx®-CLPesticides Column Set Provides Optimal Results for Organochlorine Pesticides GC-Micro-ECD Analysis Using Any Carrier Gas

Using an Rtx®-CLPesticides column set is the best strategy for labs considering alternate carrier gases as a way to reduce helium consumption. These columns have a unique selectivity and produce faster results than competitor columns when using either helium or hydrogen. In addition, only Rtx®-CLPesticides columns can be used with nitrogen, which give labs the freedom to choose the carrier gas option that is best for them.

A Guide to the Analysis of Halogenated Environmental Pollutants Using Electron Capture Detection

Analyses of halogenated pollutants can be difficult because samples often are contaminated with nontarget compounds and methods can require rigorous quality control. This technical guide covers sample extraction, cleanup, and GC-ECD analysis. Includes chromatographic analysis of chlorinated pesticides, PCBs, chlorinated herbicides, haloacetic acids and more on a single column set. Request free printed copies today. (PDF - 3612kB)

Reduce Helium Consumption by 68% Using Nitrogen Purge Gas for VOCs in Water

Labs analyzing purgeable organic compounds in water can save money and reduce helium dependence by using Method 524.4 with nitrogen purge gas and an Rtx®-VMS column. By making the switch, you can reduce helium consumption by 68%, while meeting all Method 524.4 requirements. (PDF - 1464kB)

Half the Column, Same Chromatogram: Maintain Resolution of BDE 49 and BDE 71 With Proper Method Translation After Trimming an Rtx®-1614 Column for Maintenance

Column trimming can extend GC column lifetime when analyzing polybrominated diphenyl ethers (PBDEs); however, the method must be adapted to the shorter column length in order to maintain separation of critical congeners. Here we demonstrate that with proper method translation an Rtx®-1614 GC column can be trimmed nearly in half and still meet resolution requirements for BDE 49 and BDE 71.

Techniques for Optimizing GC Analysis of Ethylene Glycol in Water

Direct injections of water-based samples, such as samples containing ethylene glycol, can cause poor peak shape, sample carryover, and FID flameout. Avoid these problems using the chromatography tips described here. (PDF - 921kB)

Analyze Seven EPA Methods on One GC Column Pair! Pesticides, PCBs, Herbicides, and More on Rtx®-CLPesticides & Rtx®-CLPesticides2 Columns

Rtx®-CLPesticides and Rtx®-CLPesticides2 columns are ideal for multiple environmental ECD methods. Here we demonstrate the effectiveness of this column pair for chlorinated pesticides, PCBs as Aroclors, chlorinated herbicides, and haloacetic acids. Includes EPA Methods 8081B, 8082A, 8151A, 504.1, 505, 508.1, and 552.2. Speed up your analyses and reduce downtime using the versatile Rtx®-CLPesticides/Rtx®-CLPesticides2 column pair in a dual column configuration. (PDF - 3972kB)

Ship Our Rugged Air Canisters at No Extra Cost

Air sampling canisters from Restek are durable, easy to use, and highly inert. They weigh just grams more than canisters from other vendors and cost the same to ship. Check out this weight and cost comparison to see for yourself! (PDF - 1795kB)

Improve Results for Chlorinated Pesticides With Resprep® CarboPrep® SPE Cleanup

Ensure cleaner sample extracts and obtain high recoveries of target pesticides by adding a Resprep® CarboPrep® SPE cleanup step when preparing samples for chlorinated pesticides analysis. (PDF - 1683kB)

Fingerprinting Crude Oils and Tarballs using Biomarkers and Comprehensive Two-Dimensional Gas Chromatography

Comprehensive two-dimensional gas chromatography time-of-flight mass spectrometry (GCxGC-TOFMS) was used to analyze petroleum biomarkers creating unique fingerprints of crude oil samples and tarballs collected after the Deepwater Horizon oil spill.

Improve GC Analysis of Extractable Petroleum Hydrocarbons Using Resprep® EPH Fractionation SPE Cartridges

New manufacturing and testing procedures for Resprep® EPH fractionation SPE cartridges reduce background levels of extractable contaminants and assure more reliable fractionation of aliphatics from aromatics. (PDF - 1279kB)

Rapid Determination of TO-15 Volatile Organic Compounds (VOCs) in Air

The efficacy of using a Nutech preconcentrator and a 30 m analytical column for VOC analysis of air samples according to Method TO-15 was evaluated. Results demonstrate that method criteria were easily met and in much faster analysis times than typical methods based on 60 m columns.

Restek Ultra-Clean Resin

Restek-exclusive Ultra-Clean resin is a great alternative to XAD®-2 resin for sampling semivolatiles. Learn more about how our GC-tested resin, as well as our polyurethane foam (PUF) plugs, can help you with your ambient, indoor, and industrial hygiene air-sampling applications. (PDF - 656kB)

New Rxi®-PAH GC Column; Resolve Important Isobaric Polycyclic Aromatic Hydrocarbons for Food Safety and Environmental Methods

Separate isobaric polycyclic aromatic hydrocarbons, including priority EFSA PAH4 compounds benz[a]anthracene, chrysene, benzo[b]fluoranthene, and benzo[a]pyrene, easily and accurately on an Rxi®-PAH column. Whether you need more resolution or faster analysis, these new GC columns offer the selectivity and efficiency you need for food safety and environmental PAH analysis. (PDF - 826kB)

A New Solution for Trace-Level Analysis of 1,4-Dioxane in Drinking Water: Large Volume Injection in an Unmodified Splitless GC Inlet

Quantify 1,4-dioxane in drinking water down to 5.0 ppt using a new approach. The technique described here uses an unmodified split/splitless GC inlet with concurrent solvent recondensation–large volume splitless injection (CSR-LVSI) to lower detection limits. This 8-page brochure details system setup, sample prep, and analysis. (PDF - 1812kB)

Florisil® SPE Cleanup for Chlorinated Pesticides Analysis

Florisil SPE tubes are ideal for cleanup of sample extracts prior to GC-ECD analysis of chlorinated pesticides. By using Florisil tubes for extract cleanup, background interferences can be reduced and recoveries can be improved. (PDF - 1182kB)

Introducing New Restek EPA 524.3 Certified Reference Materials

Restek has formulated the most complete set of EPA 524.3 reference standards for the monitoring of purgeable organic compounds in drinking water—using as few as three ampuls! This collection of certified reference materials (CRMs) also covers the seven volatile organic compounds (VOCs) included in UCMR3. (PDF - 1000kB)

Airmail, 2012 vol. 2

This issue of Airmail includes a fast, sensitive analysis of TO-15 volatiles on a 30 m column, as well as an update on opportunities for air labs to collaborate with the EPA to meet Agency measuring and monitoring needs. Also features Tedlar® bags. (PDF - 867kB)

Analysis of Trace Oxygenates in Petroleum-Contaminated Wastewater, Using Purge-and-Trap GC-MS (U.S. EPA Methods 5030B & 8260)

Determination of oxygenates in a gasoline-water matrix is difficult, because analytes such as MTBE and TBA coelute on many columns and share GC-MS identification ions. We developed a sensitive, accurate analysis using an Rtx®-VMS column and optimized conditions.

Lowering Detection Limits for 1,4-Dioxane in Drinking Water Using Large Volume Injection in an Unmodified Splitless GC Inlet

Concurrent solvent recondensation–large volume splitless injection (CSR-LVSI) typically requires a special GC inlet. The technique described here uses an unmodified split/splitless inlet with CSR-LVSI to lower detection limits for the analysis of 1,4-dioxane in drinking water.

Increase Productivity for Dioxin and Furan Analysis with Rtx®-Dioxin2 GC Columns

Rtx®-Dioxin2 columns have higher temperature stability (340 °C) than other confirmation columns and also provide isomer specificity for both 2,3,7,8-TCDD and 2,3,7,8-TCDF in a single column. These attributes allowed the Maxxam Analytics HR-MS group to make productivity improvements that resulted their being honored with a Kaizen award. (PDF - 691kB)

Rxi®-624Sil MS Columns—Exceptionally Inert, Low Bleed Columns for Volatiles Analysis

Analyze volatile compounds and polar analytes with greater confidence using Rxi®-624Sil MS columns. Optimized selectivity, higher inertness, and lower bleed result in reliable separations and accurate, trace-level determinations. Includes environmental and pharmaceutical applications. (PDF - 3111kB)

Restek Airmail, 2012 vol. 1

This 4-page newsletter includes an analysis of Massachusetts DEP air-phase petroleum hydrocarbons, as well as an update on the U.S. EPA Photochemical Assessment Monitoring Stations (PAMS) program. Also features Tedlar® bags and air canisters. (PDF - 774kB)

Large Volume Splitless Injection Using an Unmodified Split/Splitless Inlet and GC-TOFMS for Pesticides and Brominated Flame Retardants

Concurrent solvent recondensation large volume splitless injection (CSR-LVSI) GC/MS is used here for analyzing pesticides and brominated flame retardants in drinking water based on EPA Method 527. CSR-LVSI allows a time-consuming sample extract concentration step to be eliminated, but can also be used with extract concentration for lower detection limits.