

22/01/2011

Introducing Sky Inlet Liners / ...

Introducing Sky™ Inlet Liners

By Scott Grossman, GC Accessories Chemist

True Blue Performance

- Increase accuracy and reproducibility with state-of-the-art deactivation.
- Achieve lower detection limits for a wide range of active compounds.
- Use wool without risking the loss of sensitive analytes.

When faced with complex choices, simple solutions stand out. Sky™ inlet liners from Restek use a comprehensive, state-of-the-art deactivation and are the only blue liners on the market—making them an easy-to-recognize solution to common inlet problems.



The innovative deactivation used for Sky™ liners results in exceptional inertness for a wide range of analyte chemistries. By reducing active sites and enhancing analyte transfer to the column, these liners increase accuracy and precision, allowing lower detection limits for many active compounds. In addition to improved data quality, you'll benefit from fewer liner changes and less downtime for maintenance.

Selecting the right liner for your application can be a daunting task. Sky™ inlet liners make the choice simple; the comprehensive deactivation, distinctive color, and availability in popular configurations mean Sky™ liners are the best choice for optimizing chromatographic performance. Regardless of your application, Sky™ liners provide reliable inertness and assured performance, day-after-day and analysis-after-analysis.

The Story Behind Sky™

For over 25 years, Restek's vision has been to be the company chromatographers trust. This philosophy is the cornerstone of our business, and it's the reason our chemists and engineers are dedicated to developing innovative, best-in-class products like Sky™ liners. As chromatographers, we understand your needs and strive to develop and deliver products that make your life easier.

With Sky™ liners our goal was to create a state-of-the-art deactivation that provides superior performance, but why did we make them blue? Restek has always been associated with the color blue; to us, it signifies strength, innovation, and excellence. We made SKY™ liners blue because it represents the technological advancements and unmatched quality that define Restek products. Choose blue—the best choice for dependable results.

Simple Solutions: Sky™ Inlet Liners

Inert Sky™ Inlet Liners Improve Accuracy and Precision for a Wide Range of Analytes

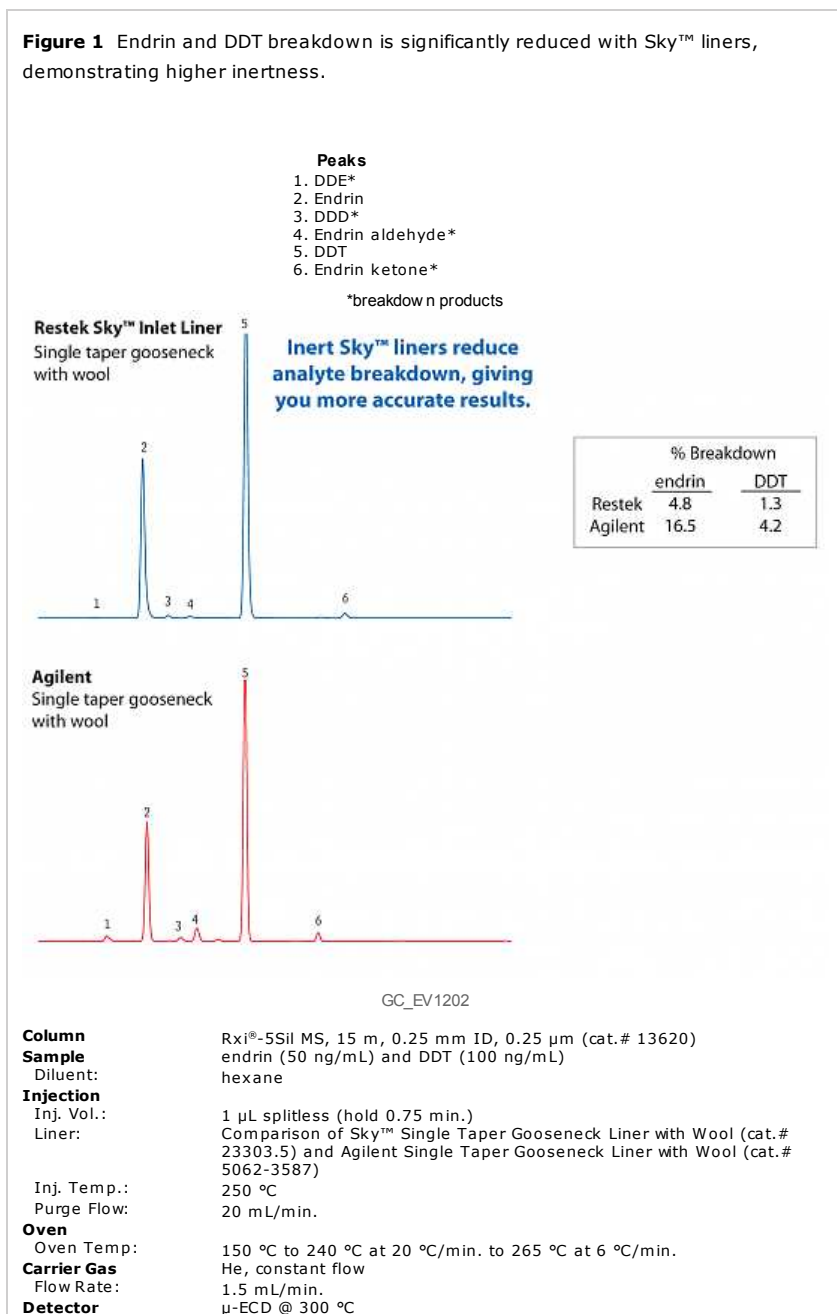
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Many chromatographic problems, such as poor response and missing or tailing peaks are caused by activity in the inlet liner. These effects complicate quantification and can be particularly problematic for sensitive analytes. New Sky™ inlet liners from Restek offer exceptional inertness, assuring enhanced transfer of analytes to the column, good response, and highly symmetric peaks. The inertness of these liners is due to a state-of-the-art deactivation process that completely passivates the liner and wool so that they are inert to a wide variety of reactive analytes.

Some deactivations, such as base deactivation, are effective only for particular target compound chemistries. In contrast, the balanced deactivation of Sky™ liners prevents interactions with many chemical classes. As shown below, complex pesticide probes, as well as both acidic and basic compounds have strong responses and excellent peak shapes, demonstrating the inertness of Sky™ liners. With new Sky™ inlet liners you will see improved sensitivity, accuracy, and reproducibility liner-to-liner, which allows you to quantify challenging compounds at trace levels with confidence.

Reduced Breakdown Improves Trace Analyses

Endrin & DDT are important analytes for the environmental and food safety industries, and also serve as excellent general probes for liner inertness. Both compounds are sensitive to different modes of activity due to their chemical structures and because they are analyzed at very low concentrations (typically parts-per-billion concentrations for µECD analyses). As shown in Figure 1, Sky™ liners are significantly more inert than comparable liners from Agilent, showing 3-4 times less endrin and DDT breakdown.



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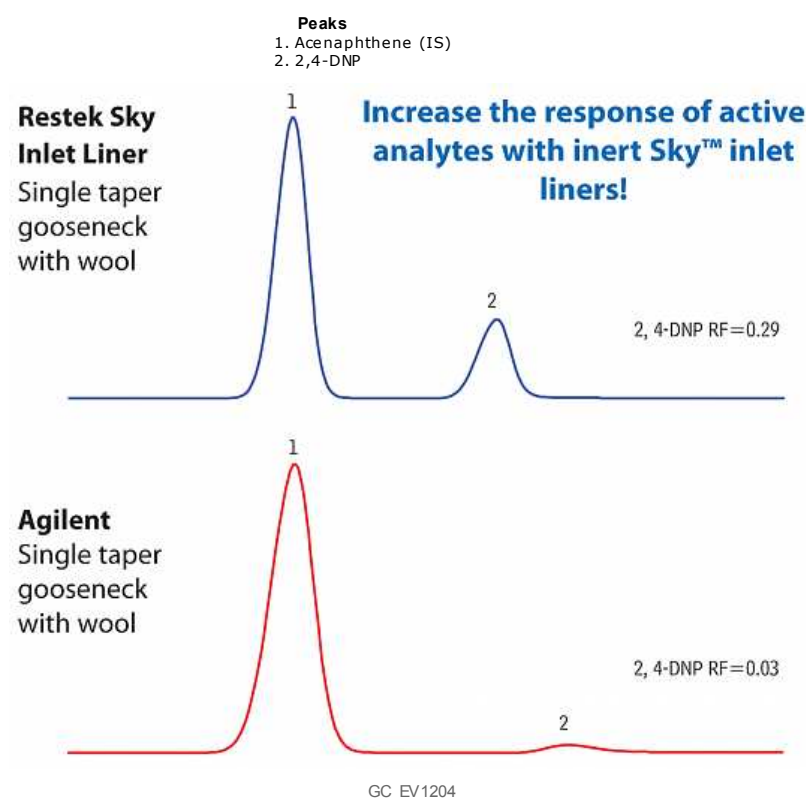
Simple Solutions: Sky™; Inlet Lin...

Make-up Gas Flow
Rate: 60 mL/min.
Make-up Gas Type: N₂
Data Rate: 20 Hz
Instrument Agilent/HP6890 GC

Greater Inertness Results in Higher Analyte Response

Another common probe used to illustrate inertness is 2,4-dinitrophenol (2,4-DNP), which functions as an indicator of acid compound interactions. It is used to monitor system suitability in semivolatiles methods, which benefit from the use of wool to assist in sample vaporization. As shown in Figure 2, the response of 2,4-DNP with the Sky™ inlet liner, even at low concentrations, is superior to a competitor's liner. The Agilent liner with wool has active sites that adsorb 2,4-DNP and reduce its response. In contrast an excellent response is achieved using the Sky™ liner, even in the presence of wool.

Figure 2 The state-of-the-art deactivation used for Sky™ liners with wool results in higher responses for active acid compounds, such as 2,4-DNP.



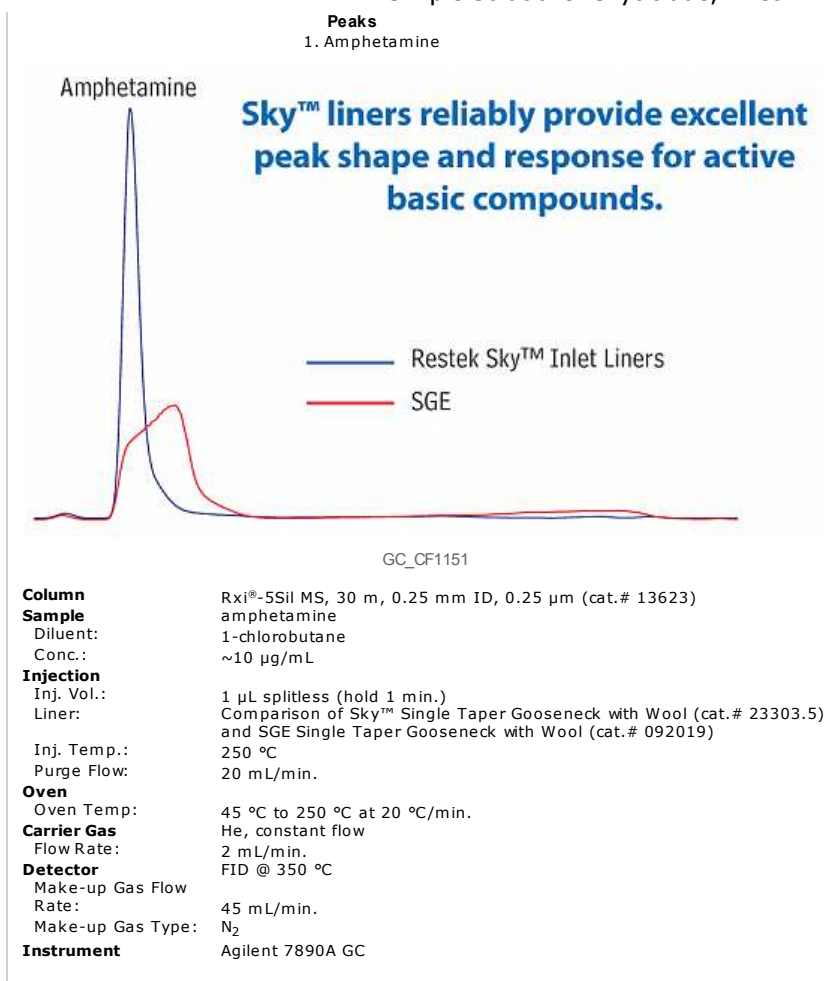
Column Rxi®-5Sil MS, 15 m, 0.25 mm ID, 0.25 µm (cat.# 13620)
Sample 2,4-dinitrophenol and acenaphthene standard
Diluent: methylene chloride
Conc.: 10 µg/mL each
Injection
Inj. Vol.: 1 µL splitless (hold 1 min.)
Liner: Comparison of Sky™ Single Taper Gooseneck Inlet Liner with Wool (cat.# 23303.5) and Agilent Single Taper Gooseneck Inlet Liner with Wool (cat.# 5062-3587)
Inj. Temp.: 250 °C
Purge Flow: 20 mL/min.
Oven
Oven Temp.: 50 °C to 150 °C at 20 °C/min. (hold 2.2 min.)
Carrier Gas He, constant flow
Flow Rate: 1.5 mL/min.
Detector FID @ 300 °C
Make-up Gas Flow
Rate: 30 mL/min.
Make-up Gas Type: N₂
Instrument Agilent/HP6890 GC

Comprehensive Deactivation Assures Excellent Peak Shape

In addition to providing excellent results for reactive pesticides and acidic compounds, Sky™ inlet liners are also highly inert to active basic compounds, such as underivatized amphetamines. The exceptional inertness of Sky™ liners produces much better peak shape than is typically seen on other liners, resulting in simpler quantification and more accurate results (Figure 3).

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Simple Solutions: Sky™ Inlet Lin...



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Liner-to-Liner Reproducibility: A Meas...

Liner-to-Liner Reproducibility: A Measure of Consistent Quality

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It's not good enough to have one quality liner. You have to be confident that every liner will give the same level of performance. We test Sky™ liners extensively to ensure that each one is exceptionally inert and will provide optimal results. Using endrin breakdown as a measure of reproducibility, the data in Figure 1, based on multiple lots, illustrate that Sky™ liners are more consistently inert than competitor products.

New Sky™ liners provide exceptional inertness across a wide range of active analytes. The consistent, comprehensive deactivation process results in the accuracy and precision you need for reliable trace level analyses. Simplify liner selection with Sky™ liners from Restek — choose blue, the best choice for dependable results.

Figure 1 Sky™ inlet liners from Restek consistently show less endrin breakdown than comparable liners from other sources.

