

Spot the Difference
in the SGE Lineup



Inlet Liners

- Easy to choose
- Easy to use
- Confidence in your analysis

Inlet Liners

Spot the Difference in the SGE Lineup

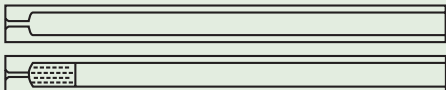
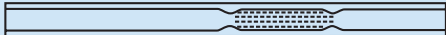

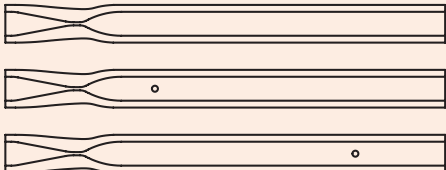
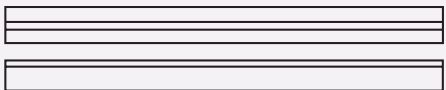
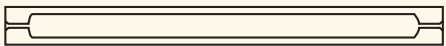

Easy to Choose

Choosing the right inlet liner and injection parameter can increase peak areas and reduce detection limits by up to 300%.¹

Customer research shows that a significant number of GC users don't understand the importance of inlet liner selection, or how it contributes to their analysis. The SGE inlet liner range aims to make it simple for all gas chromatographers to select the right liner.

So you can optimize your results for different sample types, inlet liners are color coded by geometry for ease of selection.

1. Kende, A et al. Chromatographia, 2006; 63 (3/4): 181-7

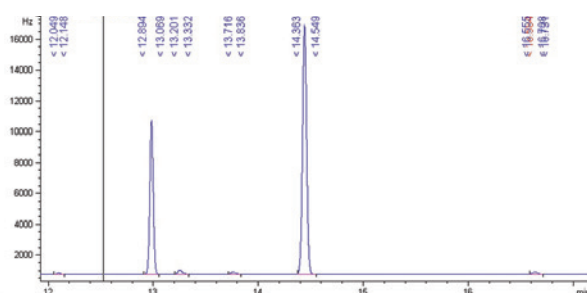
Color	Injection Technique	Sample Types	Liner Geometry
Dark Green	Splitless	<ul style="list-style-type: none"> Trace level analyses. Active compounds. 	Taper / Gooseneck 
Blue	Split	<ul style="list-style-type: none"> General purpose. Concentrated samples. Dirty samples. 	FocusLiner® 
Aqua	Splitless	<ul style="list-style-type: none"> Trace level analyses. Dirty samples. Wide boiling point range. 	Taper FocusLiner® 
Orange	Direct	<ul style="list-style-type: none"> Trace level analyses. Active compounds. 	ConnectTite 
Purple	Split Splitless	<ul style="list-style-type: none"> General purpose. Concentrated samples. Dirty samples (only if quartz wool is present) Gaseous samples (also Purge and Trap, Headspace). 	Straight 
Yellow	Splitless LVI	<ul style="list-style-type: none"> Trace level analyses. Low boiling point compounds. Active compounds. 	Double Taper 
Grey	PTV LVI	<ul style="list-style-type: none"> Trace level analyses. Large volume injections. 	PTV/LVI 

Confidence in Quality Assurance

- SGE inlet liners have the lowest level of Endrin degradation and DDT degradation when compared to competitor results.
- Every batch is tested for activity using the EPA 8081B method. A 5 ppm standard is used to validate that every batch has less than 3 % Endrin degradation and less than 1 % DDT degradation.
- Each pack includes a batch certificate with quality assurance test results.

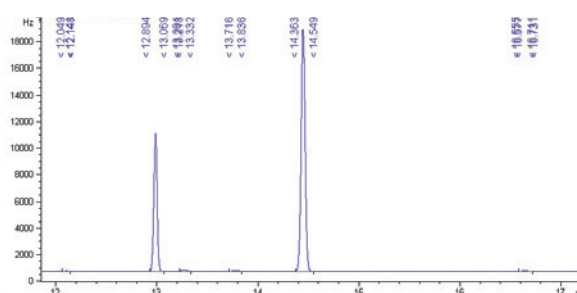
Liner Comparison Endrin and DDT % Breakdown

Competitor Liner



Endrin Deg% 3.23
DDT Deg% 1.95

SGE FocusLiner®



Endrin Deg% 1.33
DDT Deg% 0.83

If the Endrin or DDT breakdown is 3% or higher it is a FAIL.

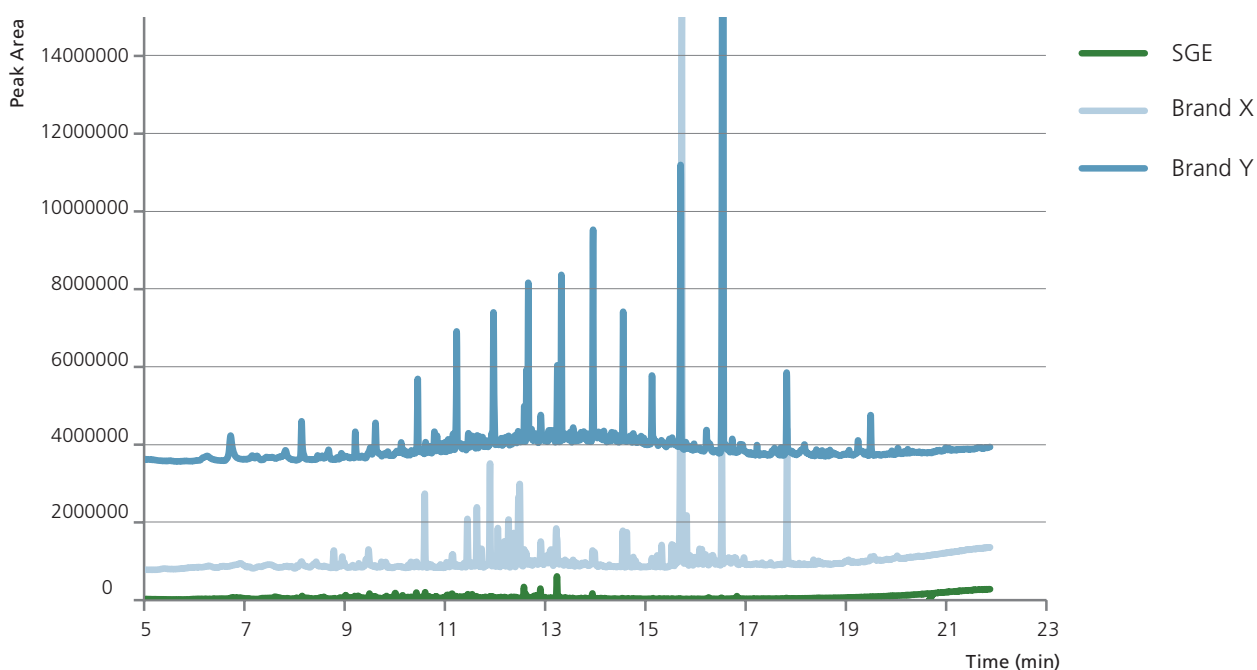
Inlet Liners

Spot the Difference in the SGE Lineup

Confidence in Your Trace Analysis

SGE inlet liners have the lowest siloxane bleed due to unique thin film deactivation - making them the liner of choice for sensitive MS analysis.

MS Scan for Siloxane Bleed – Thick vs Thin Film Deactivation



Injection	No injection – gas flow for 5 mins
Injector Temp	350 °C
Purge Flow	20 mL/min
Oven Program	50 °C to 350 °C (20 °C/min) hold 2.2 mins

Carrier Gas	He (1.2 mL/min)
Detector (MS)	50-650 mz
Instrument	Agilent 6890



Easy to Use

SGE inlet liners come as a complete, packaged solution.

- Packs of 1, 5 and 25 liners.
- Complete with instrument appropriate o-rings or sealing rings.
- Each pack supplied with quality assurance test results.
- 5 and 25 blister packs are perforated enabling easy division, while maintaining liner integrity.
- 25 packs come in a re-usable container, with a range of attractive designs that will be handy around the lab.



Inlet Liners

Spot the Difference in the SGE Lineup

Confidence in Your Analysis

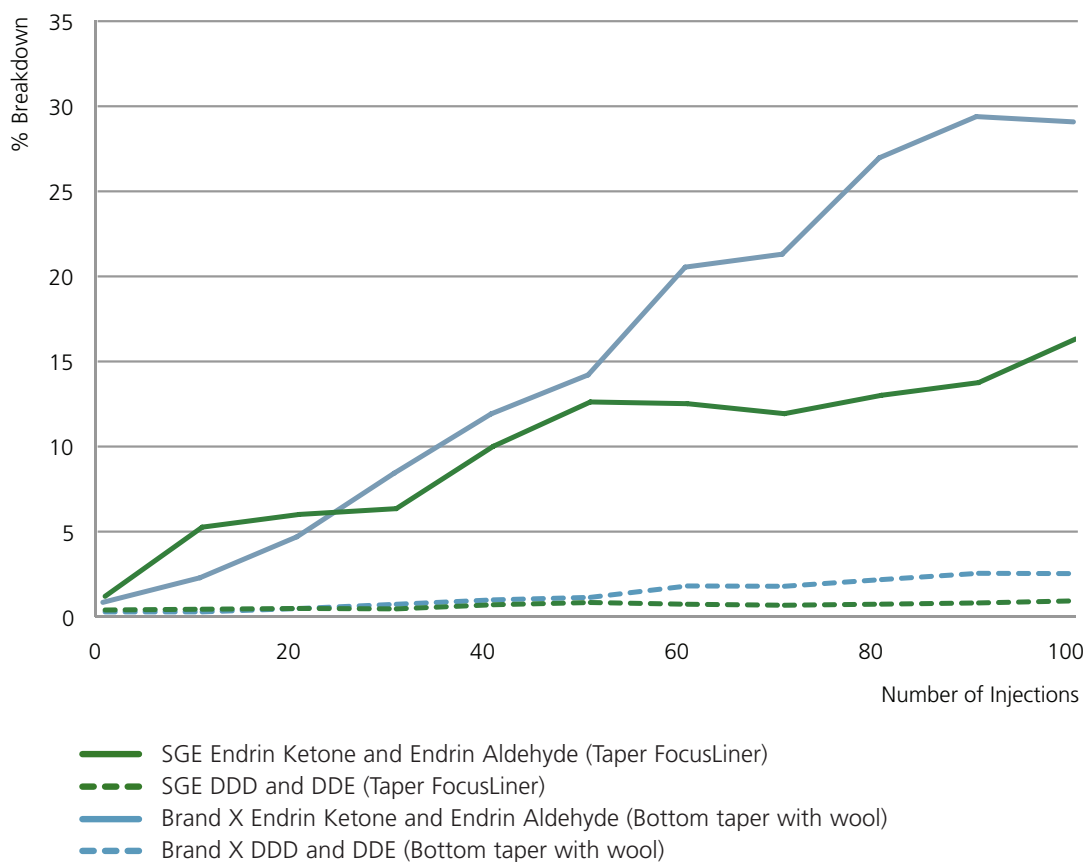
Whether for routine analysis, difficult probes, or trace analysis, have confidence in your analysis with SGE inlet liners. While bottom taper with wool is considered the best geometry for trace analysis, the SGE FocusLiner® delivers optimal performance in all applications.

A unique proprietary “thin film” process guarantees every surface of every SGE inlet liner, including the wool, is fully deactivated. Tests show this deactivation provides an excellent analysis whether you are testing trace pesticides, difficult probes such as 2,4-dinitrophenol, or amphetamines.

Confidence For Routine Analysis - Injection After Injection

- SGE Taper FocusLiner shows improved performance compared with a competitor’s premium deactivated liner.
- Choose the Taper FocusLiner to ensure your analysis is uncompromised injection after injection.

50 ppb 100 Repeat Injections Comparison Endrin and DDT % Breakdown

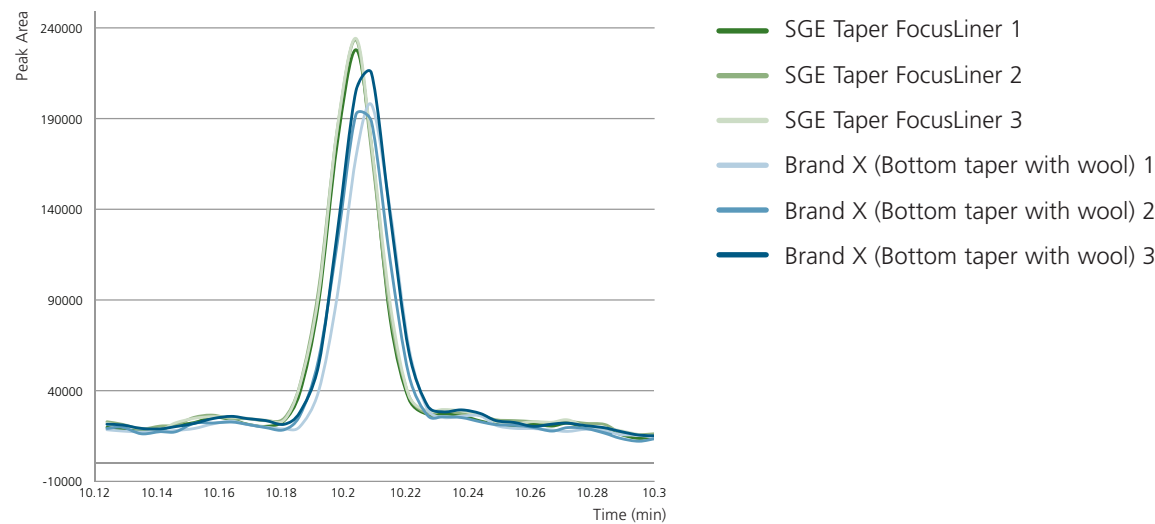


50 ppm Endrin and DDT Test Mix,
1 μ L Splitless Injection at 250 $^{\circ}$ C, HT Grade Septa (PN: 041898)

Confidence with Difficult Probes Such As 2,4-dinitrophenol

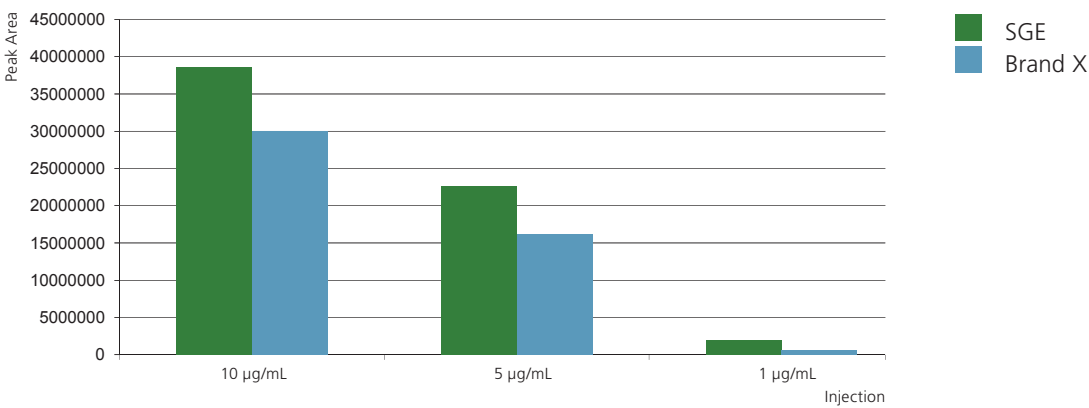
Reproducible performance with the right choice in liner geometry.

Liner Comparison 0.5 ng 2,4-dinitrophenol



Instrument	5973 inert MSD and 6890GC
Oven	40 °C to 80 °C at 10 °C a minute, 20 °C a minute to 190 °C hold for 2 minutes, 30 °C a minute to 350 °C hold for one minute.
Inlet	4.9 psi 200 °C He
Column	30 m BPX5 0.25 mm x 0.25 µm (PN: 054101)
GCMS	Scan 50 to 550
Injection Volume	1 µL
Test Mix	Custom SVOC standard mix from AccuStandard S-23011, 2000 µg/mL (diluted to 0.5 ppm)

Liner Comparison 2,4-dinitrophenol



Sample	2,4-dinitrophenol (in DCM) 10 µg/mL
Injection	1 µL Splitless (hold 1 min)
Injector Temp	250 °C
Purge Flow	20 mL/min

Oven Program	50 °C to 150 °C (20/min) hold 2.2 mins
Carrier Gas	He (1.5 mL/min)
Detector (FID)	300 °C
Instrument	Agilent 6890

Inlet Liners

Spot the Difference in the SGE Lineup

SGE Analytical Science (SGE) is a world renowned brand for components and consumables used in scientific analysis.

Primarily in the field of scientific glass engineering for liquid handling and separation science, since its beginnings in 1960, SGE has become the global market leader in niche areas such as autosampler syringes and GC inlet liners.

Completing the transition into Trajan after acquisition in 2013, SGE products make up a solid foundation of Trajan's portfolio and will continue to be created and supported by Trajan customer service and distribution networks worldwide.

For more information visit www.sge.com or contact techsupport@sge.com.



Approved Distribution Partner