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Accessories



The next level of **True Blue Performance**

Topaz GC inlet liners feature revolutionary technology and inertness to deliver the next level of:

- Deactivation
- Reproducibility
- Productivity

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* For details see back page.

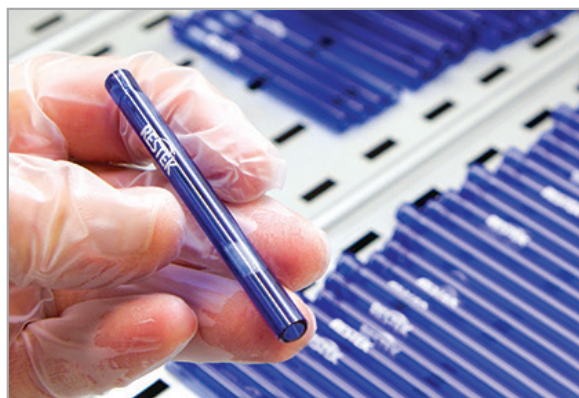


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Topaz GC Inlet Liners

Topaz GC inlet liners feature revolutionary technology and inertness to deliver the next level of True Blue Performance:

- **Deactivation**—unbelievably low breakdown for accurate and precise low-level GC analyses.
- **Reproducibility**—unbeatable manufacturing controls and QC testing for superior reliability across compound classes.
- **Productivity**—unparalleled cleanliness for maximized GC uptime and lab throughput.
- **100% Satisfaction**—if a liner doesn't perform to your expectations, we will replace it or credit your account.

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Topaz inlet liners feature a 100% satisfaction guarantee.

All Topaz inlet liners are produced with proprietary Restek processes and apply some of the tightest testing specifications in the industry. The exceptionally inert Topaz liners analysts want most are in stock now and are guaranteed to deliver outstanding performance that exceeds your expectations.



The next level of True Blue Deactivation

As the demand for lower detection limits continues to grow, even the smallest amount of activity in your liner can cause analyte breakdown and impact your results—tailing peaks, loss of response, and other issues we've all experienced. In developing Topaz GC inlet liners, our chemists created a new deactivation that yields unbelievably low breakdown.

Figure 1: High inertness is important, especially when using wool. Comparatively testing liners using highly reactive 2,4-DNP shows the competition simply can't compete.

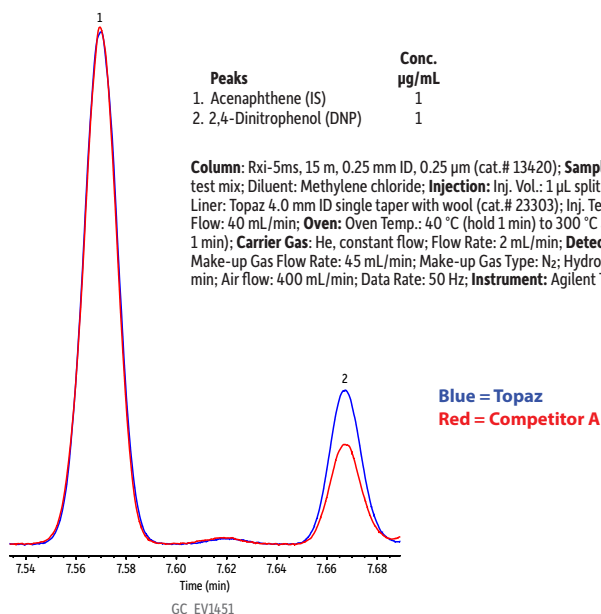


Figure 2: Regardless of your industry, carbaryl is an indicator of whether a liner has the inertness needed for trace-level work. Once again, Topaz outperforms the competition.

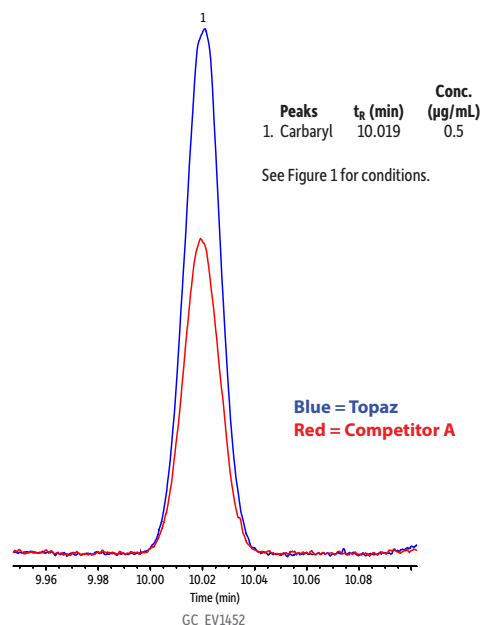
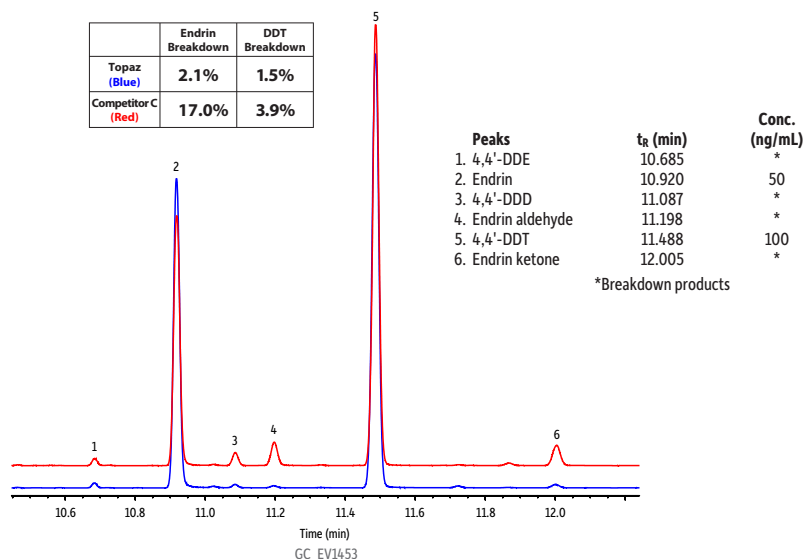


Figure 3: Government regulations can have very strict requirements for maximum analyte breakdown. For example, EPA method 8081 requires no more than 15% endrin and DDT breakdown. No problem with Topaz liners.



Liner inertness can be described as the reduction in unwanted reactions between a liner and active compounds (and, therefore, a reduction in analyte breakdown and adsorption). Topaz deactivation technology thoroughly passivates the liner—and the wool inside—so that your liner is highly inert to a wide array of reactive analytes. This inertness increases peak symmetry and response, leading to better quantitation, accuracy, and precision.

With deactivated Topaz liners, you prevent unwanted chemical interactions and minimize breakdown, which improves your data quality and dependability, and reduces instrument downtime. Even for low-level GC analysis of highly sensitive compounds—like 2,4-DNP, carbaryl, endrin, and DDT—these highly inert liners provide high-quality results that you'll have to see for yourself to believe.

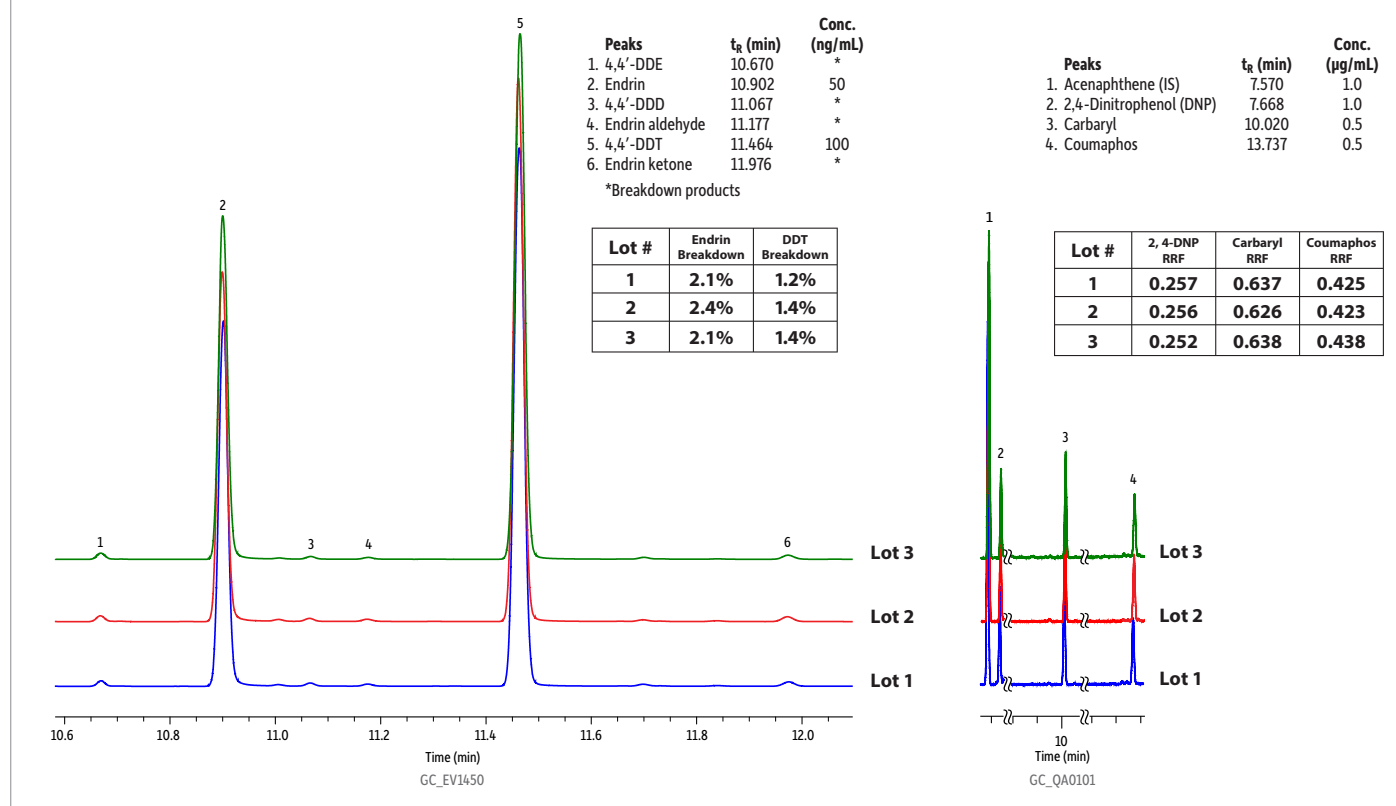
Column: Rxi-5ms, 15 m, 0.25 mm ID, 0.25 μm (cat.# 13420); **Sample:** Endrin (50 ng/mL) and DDT (100 ng/mL); **Diluent:** n-Hexane; **Injection:** Inj. Vol.: 1 μL splitless (hold 1.2 min); **Liner:** Topaz 4.0 mm single taper with wool (cat.# 23303); **Inj. Temp.:** 250 °C; **Purge Flow:** 20 mL/min; **Oven:** Oven Temp.: 50 °C (hold 1.2 min) to 240 °C at 20 °C/min to 265 °C at 6 °C/min; **Carrier Gas:** He, constant flow; **Flow Rate:** 1.5 mL/min; **Detector:** ECD @ 300 °C; **Make-up Gas Flow Rate:** 60 mL/min; **Make-up Gas Type:** N₂; **Data Rate:** 20 Hz; **Instrument:** Agilent 7890A GC.

The next level of **True Blue Reproducibility**

New Topaz inlet liners are made under strict manufacturing controls, followed by a battery of industry-specific QC tests, to prove that every lot we produce maintains superior reliability and outstanding inertness across a broad range of compound classes. By ensuring the utmost reproducibility in our liners, we help eliminate frustration and uncertainty in your work.

In the end, we don't test Topaz liners to exceed method requirements. We don't test Topaz liners to exceed industry norms. We manufacture and QC test Topaz liners to exceed your expectations and bring you the peace of mind that you can always depend on the quality and consistency of your data. Expect more—every time—with Topaz GC inlet liners.

Figure 4: As shown with the low breakdown of notoriously reactive compounds like endrin and DDT—as well as high response factors for 2,4-DNP, carbaryl, and coumaphos—you can expect the same great results from one lot to the next.



Instrument Conditions for GC_EV1450:

Column: Rxi-5ms, 15 m, 0.25 mm ID, 0.25 µm (cat.# 13420); **Sample:** Endrin (50 ng/mL) and DDT (100 ng/mL); **Diluent:** *n*-Hexane; **Injection:** Inj. Vol.: 1 µL splitless (hold 1.2 min); **Liner:** Topaz 4.0 mm single taper with wool (cat.# 23303); **Inj. Temp.:** 250 °C; **Purge Flow:** 20 mL/min; **Oven:** Oven Temp.: 50 °C (hold 1.2 min) to 240 °C at 20 °C/min to 265 °C at 6 °C/min; **Carrier Gas:** He, constant flow; **Flow Rate:** 1.5 mL/min; **Detector:** Micro-ECD @ 300 °C; **Make-up Gas Type:** N₂; **Data Rate:** 20 Hz; **Instrument:** Agilent 7890A GC.

Instrument Conditions for GC_QA0101:

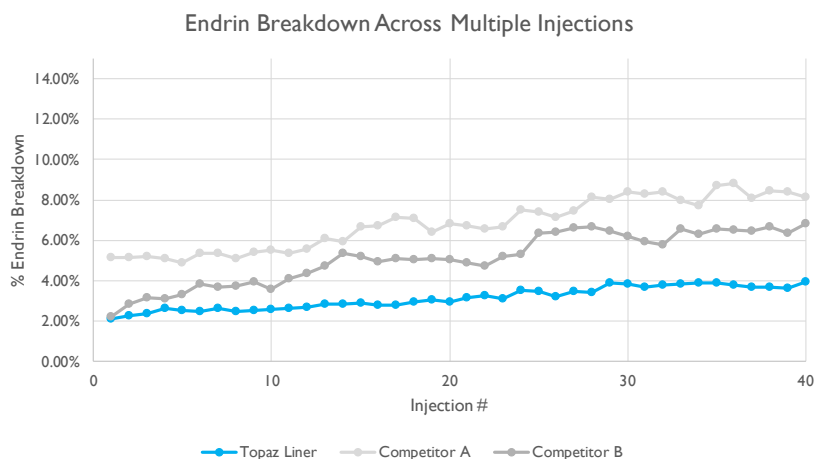
Column: Rxi-5ms, 15 m, 0.25 mm ID, 0.25 µm (cat.# 13420); **Sample:** Topaz liner FID test mix; **Diluent:** Methylene chloride; **Injection:** Inj. Vol.: 1 µL splitless (hold 1 min); **Liner:** Topaz 4.0 mm single taper liner with wool; **Inj. Temp.:** 250 °C; **Purge Flow:** 40 mL/min; **Oven:** Oven Temp.: 40 °C (hold 1 min) to 300 °C at 18.5 °C/min (hold 1 min); **Carrier Gas:** He, constant flow; **Flow Rate:** 2 mL/min; **Detector:** FID @ 340 °C; **Make-up Gas Flow Rate:** 45 mL/min; **Make-up Gas Type:** N₂; **Hydrogen flow:** 40 mL/min; **Air flow:** 400 mL/min; **Data Rate:** 50 Hz; **Instrument:** Agilent 7890A GC.

The next level of *True Blue Productivity*

Any time spent with your instrument offline—such as when changing your GC inlet liner or conditioning it afterward—directly ties to increased cost per analysis and decreased revenue for your lab... and raises the odds of yet another evening at the bench catching up on backlogged work for you. Whether you're standing in Restek's applications lab or at your own bench, it is imperative to keep running samples as long as possible, and when you do need to perform maintenance, to get back up and running as quickly as possible.

With the stability and inertness of a Topaz liner, you can analyze more samples before your data quality declines and you have to stop to replace your liner.

Figure 5: The stability of a Topaz liner shines compared to leading competitors. Breakdown of a reactive compound like endrin starts low and stays low, even after 40 injections.



Topaz liners also feature blister packaging developed for superior cleanliness. The cleaner the liner, the less time you spend conditioning after changing your liner.



Greater instrument uptime translates into more samples run and more profit for your lab. Get it with the unparalleled stability and cleanliness of Topaz inlet liners.


















Turn to the Ultimate in *Deactivation, Reproducibility, and Productivity*

Give yourself, your lab, and your customers the confidence you need in the data you generate—and the ability to keep your instruments running longer. Order your Topaz GC inlet liners today.

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Topaz Inlet Liners for Agilent GCs

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Topaz Inlet Liners for Agilent GCs Equipped with Split/Splitless Inlets	ID x OD x Length	Similar to Agilent Part #	qty.	cat.#
 1.0 mm ID Straight Liner	1.0 mm x 6.3 mm x 78.5 mm	18740-80200 (ea.)	5-pk.	23333
 4.0 mm ID Straight Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	19251-60540, 5190-2294 (ea.), 5183-4691, 5190-3164 (5-pk.), 5183-4692 (25-pk.)	5-pk.	23300
 2.0 mm ID Precision Liner w/Wool	2.0 mm x 6.3 mm x 78.5 mm		5-pk.	23468
 4.0 mm ID Precision Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	210-4004-5	5-pk.	23305
 4.0 mm ID Cyclo Liner	4.0 mm x 6.3 mm x 78.5 mm		5-pk.	23312
 2.0 mm ID Straight Liner	2.0 mm x 6.5 mm x 78.5 mm	5181-8818, 5190-6168 (ea.), 5183-4703 (5-pk.), 5183-4704 (25-pk.)	5-pk.	23313
 2.0 mm ID Straight Liner w/Wool	2.0 mm x 6.5 mm x 78.5 mm		5-pk.	23314
 2.0 mm ID Single Taper Liner	2.0 mm x 6.5 mm x 78.5 mm		5-pk.	23315
 2.0 mm ID Single Taper Liner w/Wool	2.0 mm x 6.5 mm x 78.5 mm		5-pk.	23316
 3.0 mm ID Intermediate-Volume (IV) Single Taper Inlet Liner w/Wool	3.0 mm x 6.5 mm x 78.5 mm		5-pk.	27231
 4.0 mm ID Straight Liner	4.0 mm x 6.3 mm x 78.5 mm	210-3003 (ea.), 210-3003-5 (5-pk.)	5-pk.	23301
 4.0 mm ID Single Taper Liner	4.0 mm x 6.5 mm x 78.5 mm	5181-3316, 5190-2292 (ea.), 5183-4695, 5190-3162 (5-pk.), 5183-4696 (25-pk.)	5-pk.	23302
 4.0 mm ID Single Taper Liner w/Wool	4.0 mm x 6.5 mm x 78.5 mm	5062-3587, 5190-2293 (ea.), 5183-4693, 5190-3163 (5-pk.), 5183-4694 (25-pk.)	5-pk.	23303
 4.0 mm ID Double Taper Liner	4.0 mm x 6.5 mm x 78.5 mm	5181-3315, 5190-3983 (ea.), 5183-4705, 5190-4007 (5-pk.), 5183-4706 (25-pk.)	5-pk.	23308
 4.0 mm ID Cyclo Double Taper Liner	4.0 mm x 6.5 mm x 78.5 mm		5-pk.	23310
 4.0 mm ID Low Pressure Drop Precision Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	5183-4711 (ea.), 5183-4712 (5-pk.), 5183-4713 (25-pk.)	5-pk.	23309
 4.0 mm ID Low Pressure Drop Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	5183-4647, 5190-2295 (ea.), 5183-4701, 5190-3165 (5-pk.)	5-pk.	23467

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Perfect Installation Every Time

There is never a question about which way to install a Topaz liner—simply orient it so that the column installs toward the “R” in the Restek logo.



Topaz Inlet Liners for Agilent GCs













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Topaz Inlet Liners for Agilent GCs Equipped with CIS4/PTV Inlets		ID x OD x Length	Similar to Agilent Part #	qty.	cat.#
	1.7 mm ID On-Column PTV Liner	1.7 mm x 3.0 mm x 71 mm		5-pk.	23430
	2.0 mm ID Single Baffle PTV Liner	2.0 mm x 3.0 mm x 71 mm	5183-2036	10-pk.	23431
	2.0 mm ID Single Baffle PTV Liner w/Wool	2.0 mm x 3.0 mm x 71 mm	5183-2038	10-pk.	23432
	1.5 mm ID Baffled PTV Liner	1.5 mm x 3.0 mm x 71 mm	5183-2037	10-pk.	23433
Topaz Inlet Liners for Agilent GCs Equipped with CIS4/TDU Inlets		ID x OD x Length	Similar to Gerstel Part #	qty.	cat.#
	2.0 mm ID Single Baffle CIS4/TDU Liner	2.0 mm x 3.0 mm x 78 mm	013775-010-00	10-pk.	23283
	2.0 mm ID Single Baffle CIS4/TDU Liner w/Wool	2.0 mm x 3.0 mm x 78 mm	012742-010-00	10-pk.	23284
	2.0 mm ID Baffled CIS4/TDU Liner	2.0 mm x 3.0 mm x 78 mm	012436-010-00	10-pk.	23282
Topaz Inlet Liners for Agilent GCs Equipped with Analytical Controls TPI Inlets		ID x OD x Length	Similar to Agilent Part #	qty.	cat.#
	2.4 mm ID TPI Liner for 0.53 mm ID Columns	2.4 mm x 4.0 mm x 71 mm	5190-4048 (ea.), 5190-4056 (5-pk.)	10-pk.	23429
	2.4 mm ID TPI Liner for 0.25/0.32 mm ID Columns	2.4 mm x 4.0 mm x 71 mm		10-pk.	23428
Topaz Inlet Liners for Agilent GCs Equipped with Split/Splitless Inlets SPME Injections		ID x OD x Length		qty.	cat.#
	0.75 mm ID Straight/SPME Liner	0.75 mm x 6.35 mm x 78.5 mm		5-pk.	23434
	1.8 mm ID Straight/SPME Liner	1.8 mm x 6.5 mm x 78.5 mm		5-pk.	23280
Direct Injection (for 0.25/0.32/0.53 mm ID Columns)		ID x OD x Length	Similar to Agilent Part #	qty.	cat.#
	4.0 mm ID Drilled Uniliner Liner (hole near bottom)	4.0 mm x 6.3 mm x 78.5 mm	G1544-80730 (ea.)	5-pk.	23306
	4.0 mm ID Drilled Uniliner (hole near bottom) Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	5190-7020 (5-pk.)	5-pk.	23307
	4.0 mm ID Drilled Uniliner Liner (hole near top)	4.0 mm x 6.3 mm x 78.5 mm		5-pk.	23311






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QUANTITY DISCOUNTS AVAILABLE for orders of five or more 5-packs!

Topaz Inlet Liners for Scion/Bruker/Varian GCs

Topaz Inlet Liners for Scion/Bruker/Varian GCs Equipped with 1177 Split/Splitless Inlets		ID x OD x Length	Similar to Scion/Bruker/Varian Part #	qty.	cat.#
	3.0 mm ID Intermediate-Volume (IV) Single Taper Inlet Liner w/Wool	3.0 mm x 6.5 mm x 78.5 mm		5-pk.	27231
	4.0 mm ID Frit Liner	4.0 mm x 6.3 mm x 78.5 mm		5-pk.	23330
	4.0 mm ID Precision Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm		5-pk.	23328
	4.0 mm ID Single Taper Liner	4.0 mm x 6.5 mm x 78.5 mm	392611927	5-pk.	23331
	4.0 mm ID Single Taper Liner w/Wool	4.0 mm x 6.5 mm x 78.5 mm	392611936	5-pk.	23332
Topaz Inlet Liners for Scion/Bruker/Varian GCs Equipped with SPI Inlets		ID x OD x Length	Similar to Scion/Bruker/Varian Part #	qty.	cat.#
	0.53 mm ID Straight Liner	0.53 mm x 4.6 mm x 54 mm	190010906	5-pk.	23460
	0.80 mm ID Straight Liner	0.80 mm x 4.6 mm x 54 mm	190010907	5-pk.	23461
Topaz Inlet Liners for Scion/Bruker/Varian GCs Equipped with 1078/1079 Inlets		ID x OD x Length	Similar to Scion/Bruker/Varian Part #	qty.	cat.#
	3.4 mm ID Liner with Top Taper	3.4 mm x 5.0 mm x 54 mm	392611945	5-pk.	23329
	3.4 mm ID Frit Liner with Top Taper	3.4 mm x 5.0 mm x 54 mm	392611946	5-pk.	23462
	2.0 mm ID Liner with Single Taper	2.0 mm x 5.0 mm x 54 mm	392611947	5-pk.	23463
	0.75 mm ID Straight/SPME Liner	0.75 mm x 5.0 mm x 54 mm	392611948	5-pk.	23465
	3.4 mm ID Precision Top Taper Liner w/Wool	3.4 mm x 5.0 mm x 54 mm		5-pk.	23466

Topaz Inlet Liners for DANI GCs

Topaz Inlet Liners for DANI GCs		ID x OD x Length	qty.	cat.#
	2.0 mm ID Straight Liner	2.0 mm x 6.0 mm x 70 mm	5-pk.	23292
	2.2 mm ID Dimpled Liner w/Wool	2.2 mm x 4.0 mm x 55 mm	5-pk.	23296
	2.2 mm ID Dimpled Liner w/Wool (includes: ferrule set)	2.2 mm x 4.0 mm x 55 mm	5-pk.	23289
	4.0 mm ID Straight Liner	4.0 mm x 6.0 mm x 70 mm	5-pk.	23294
	4.0 mm ID Straight Liner w/Wool	4.0 mm x 6.0 mm x 70 mm	5-pk.	23295
	4.0 mm ID Straight Liner w/Wool (includes: ferrule set)	4.0 mm x 6.0 mm x 70 mm	5-pk.	23288
	4.0 mm ID Single Taper Liner w/Wool	4.0 mm x 6.0 mm x 70 mm	5-pk.	23297
	4.0 mm ID Single Taper Liner w/Wool (includes: ferrule set)	4.0 mm x 6.0 mm x 70 mm	5-pk.	23290

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Topaz Inlet Liners for PerkinElmer GCs

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Topaz Inlet Liners for PerkinElmer Clarus 590/690 and GC2400 GCs Equipped with Split/Splitless Inlets		ID x OD x Length	Similar to PerkinElmer Part #	qty.	cat.#
	0.75 mm ID Straight/SPME Inlet Liner	0.75 mm x 6.35 x 78.5	N6502044	5-pk.	23803
	1.0 mm Straight Inlet Liner	1.0 mm x 6.3 x 78.5	N6502037	5-pk.	23802
	2.0 mm ID Straight Inlet Liner	2.0 mm x 6.5 x 78.5	N6502033	5-pk.	23798
	4.0 mm ID Straight Inlet Liner w/Wool	4.0 mm x 6.3 x 78.5	N6502036	5-pk.	23801
	4.0 mm ID Precision Inlet Liner w/Wool	4.0 mm x 6.3 x 78.5	N6502034	5-pk.	23799
	3.0 mm ID Intermediate-Volume (IV) Single Taper Inlet Liner w/Wool	3.0 mm x 6.5 mm x 78.5 mm	—	5-pk.	27231
	4.0 mm ID Single Taper Inlet Liner	4.0 mm x 6.5 x 78.5	N6502031	5-pk.	23796
	4.0 mm ID Single Taper Inlet Liner w/Wool	4.0 mm x 6.5 x 78.5	N6502035	5-pk.	23800
	4.0 mm ID Low Pressure Drop Precision Inlet Liner w/Wool	4.0 mm x 6.3 x 78.5	N6502032	5-pk.	23797
Topaz Inlet Liners for PerkinElmer Auto SYS and Clarus 580/680 GCs Equipped with Split/Splitless Inlets		ID x OD x Length	Similar to PerkinElmer Part #	qty.	cat.#
	4.0 mm ID Straight Liner w/Wool	4.0 mm x 6.2 mm x 92.1 mm	N6502009	5-pk.	23449
	4.0 mm ID Precision Liner w/Wool	4.0 mm x 6.2 mm x 92.1 mm	N6121020	5-pk.	23450
	2.0 mm ID Straight Liner w/Wool	2.0 mm x 6.2 mm x 92.1 mm	N6121021	5-pk.	23451
Topaz Inlet Liners for PerkinElmer GCs Equipped with PSS Inlets		ID x OD x Length	Similar to PerkinElmer Part #	qty.	cat.#
	2.0 mm ID Straight Liner w/Wool	2.0 mm x 4.0 mm x 86.2 mm	N6121004	5-pk.	23317
Topaz Inlet Liners for PerkinElmer Auto SYS and Clarus 580/680 GCs Equipped with Split/Splitless Inlets: Direct Injection		ID x OD x Length	Similar to PerkinElmer Part #	qty.	cat.#
	4.0 mm ID Open-Top Uniliner Liner w/Wool	4.0 mm x 6.2 mm x 92.1 mm	N6502016	5-pk.	23452
	4.0 mm ID Drilled Uniliner Liner (hole near top)	4.0 mm x 6.2 mm x 92.1 mm	N6121022	5-pk.	23453
	4.0 mm ID Drilled Uniliner Liner (hole near bottom)	4.0 mm x 6.2 mm x 92.1 mm	N6502013	5-pk.	23454
Topaz Inlet Liners for PerkinElmer GCs Equipped with PSS Inlets: Direct Injection		ID x OD x Length		qty.	cat.#
	2.0 mm ID Drilled Uniliner (hole near top)	2.0 mm x 4.0 mm x 86.2 mm		5-pk.	23281

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Topaz Inlet Liners for Shimadzu GCs






Topaz Inlet Liners for Shimadzu 17A, 2010, and 2014 GCs Equipped with Split/Splitless Inlets		ID x OD x Length	Similar to Shimadzu Part #	qty.	cat.#
	3.5 mm ID Straight Liner	3.5 mm x 5.0 mm x 95 mm	221-41444-01	5-pk.	23318
	3.5 mm ID Straight Liner w/Wool	3.5 mm x 5.0 mm x 95 mm		5-pk.	23319
	3.5 mm ID Precision Liner w/Wool	3.5 mm x 5.0 mm x 95 mm		5-pk.	23320
	3.5 mm ID Single Taper Precision Liner w/Wool	3.5 mm x 5.0 mm x 95 mm		5-pk.	23455
	3.5 mm ID Cyclo Single Taper Liner	3.5 mm x 5.0 mm x 95 mm		5-pk.	23456
	3.0 mm Intermediate-Volume (IV) Single Taper Inlet Liner w/Wool for Shimadzu GCs	3.0 mm x 5 mm x 95 mm		5-pk.	27232
	3.5 mm ID Single Taper Liner	3.5 mm x 5.0 mm x 95 mm	221-48335-01	5-pk.	23321
	3.5 mm ID Single Taper Liner w/Wool	3.5 mm x 5.0 mm x 95 mm		5-pk.	23336
	3.5 mm ID Single Taper Liner w/Wool	3.5 mm x 5.0 mm x 95 mm		5-pk.	23322
	3.5 mm ID Double Taper Liner	3.5 mm x 5.0 mm x 95 mm		5-pk.	23457
	3.5 mm ID Straight Liner w/Wool	3.5 mm x 5.0 mm x 95 mm	221-41444-00	5-pk.	23458
Topaz Inlet Liners for Shimadzu 17A GCs Equipped with PTV Inlets		ID x OD x Length	Similar to Shimadzu Part #	qty.	cat.#
	1.6 mm ID Straight PTV Liner w/Wool	1.6 mm x 4.0 mm x 95 mm	225-09212-01	5-pk.	23435
Topaz Inlet Liners for Shimadzu 17A, 2010, and 2014 GCs Equipped with Split/Splitless Inlets: SPME Injection		ID x OD x Length		qty.	cat.#
	1.8 mm ID Straight/SPME Liner	1.8 mm x 5.0 mm x 95 mm		5-pk.	23279
Topaz Inlet Liners for Shimadzu 17A, 2010, and 2014 GCs Equipped with Split/Splitless Inlets: Direct Injection		ID x OD x Length		qty.	cat.#
	3.5 mm ID Uniliner Liner w/Wool	3.5 mm x 5.0 mm x 95 mm		5-pk.	23459
Topaz Inlet Liners for Shimadzu 2010 GCs Equipped with PTV inlets		ID x OD x Length		qty.	cat.#
	1.5 mm ID Straight PTV Liner	1.5 mm x 3.5 mm x 95 mm		10-pk.	23471
	1.5 mm ID Straight PTV Liner w/Wool	1.5 mm x 3.5 mm x 95 mm		10-pk.	23472

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Topaz Inlet Liners for Thermo Scientific GCs


Topaz Inlet Liners for Thermo Scientific TRACE, 8000, 8000 TOP, and Focus GCs Equipped with Split/Splitless Inlets

	ID x OD x Length	Similar to Thermo Part #	qty.	cat.#
 3.0 mm ID Straight Liner	3.0 mm x 8.0 mm x 105 mm	453 20031	5-pk.	23439
 3.0 mm ID Straight Liner w/Wool	3.0 mm x 8.0 mm x 105 mm		5-pk.	23440
 5.0 mm ID Straight Liner	5.0 mm x 8.0 mm x 105 mm	453 20030	5-pk.	23323
 5.0 mm ID Straight Liner w/Wool	5.0 mm x 8.0 mm x 105 mm		5-pk.	23324
 5.0 mm ID Precision Liner w/Wool	5.0 mm x 8.0 mm x 105 mm		5-pk.	23327
 3.0 mm ID Single Taper Liner	3.0 mm x 8.0 mm x 105 mm	453 20032	5-pk.	23441
 3.0 mm ID Single Taper Liner w/Wool	3.0 mm x 8.0 mm x 105 mm		5-pk.	23442
 5.0 mm ID Precision Liner with Single Taper w/Wool	5.0 mm x 8.0 mm x 105 mm		5-pk.	23443
 5.0 mm ID Single Taper Liner	5.0 mm x 8.0 mm x 105 mm	453 20033	5-pk.	23325
 5.0 mm ID Single Taper Liner w/Wool	5.0 mm x 8.0 mm x 105 mm		5-pk.	23326




Topaz Inlet Liners for Thermo Scientific TRACE 1300/1310 and 1600/1610 GCs Equipped with Split/Splitless Inlets

	ID x OD x Length	Similar to Thermo Part #	qty.	cat.#
 1.0 mm ID Straight Liner	1.0 mm x 6.3 mm x 78.5 mm		5-pk.	23448
 4.0 mm ID Precision Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	453A1255UI	5-pk.	23267
 4.0 mm ID Cyclo Liner	4.0 mm x 6.3 mm x 78.5 mm		5-pk.	23269
 3.0 mm ID Intermediate-Volume (IV) Single Taper Inlet Liner w/Wool	3.0 mm x 6.5 mm x 78.5 mm		5-pk.	27231
 4.0 mm ID Straight Liner	4.0 mm x 6.3 mm x 78.5 mm	453A1295-UI	5-pk.	23445
 4.0 mm ID Single Taper Liner	4.0 mm x 6.5 mm x 78.5 mm	453A1345-UI	5-pk.	23446
 4.0 mm ID Single Taper Liner w/Wool	4.0 mm x 6.5 mm x 78.5 mm	453A1925-UI	5-pk.	23447
 4.0 mm ID Cyclo Double Taper Liner	4.0 mm x 6.5 mm x 78.5 mm		5-pk.	23270
 4.0 mm ID Straight Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm	453A2265-UI	5-pk.	23444
 4.0 mm ID Low Pressure Drop Precision Liner w/Wool	4.0 mm x 6.3 mm x 78.5 mm		5-pk.	23268

Topaz Inlet Liners for Thermo Scientific TRACE 1300/1310 and 1600/1610 GCs Equipped with Split/Splitless Inlets: SPME Injections

	ID x OD x Length	qty.	cat.#
 1.8 mm ID Straight/SPME Liner	1.8 mm x 6.5 mm x 78.5 mm	5-pk.	23278

Topaz Inlet Liners for Thermo Scientific TRACE GCs Equipped with PTV Inlets

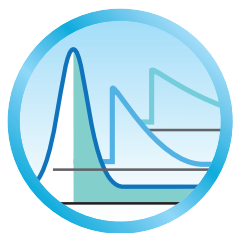
	ID x OD x Length	Similar to Thermo Part #	qty.	cat.#
 1.0 mm ID Straight PTV Liner	1.0 mm x 2.75 mm x 120 mm	453 22054	5-pk.	23436
 2.0 mm ID Split PTV Liner	2.0 mm x 2.75 mm x 120 mm	453 22045	5-pk.	23437
 2.0 mm ID Baffled PTV Liner	2.0 mm x 2.75 mm x 120 mm	453T2845-UI	5-pk.	23438

Patented



What Will You Lose When You Switch to **Topaz Liners**?

Revolutionary Topaz deactivation results in unbelievably low breakdown and higher responses for active compounds—with each and every liner you order. These liners will help you generate more accurate and more precise low-level GC analyses and help prevent common data issues.



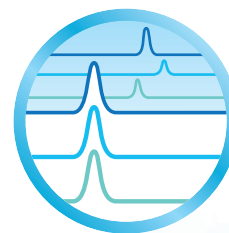
**Eliminate
Tailing Peaks**



**Avoid Loss
in Response**



**Stop Analyte
Breakdown**



**Reduce Liner-to-
Liner Variability**

What Will You Gain? **Productivity.**

Extend your uptime and generate more revenue with Topaz liners. *Learn how inside.*

* 100% SATISFACTION GUARANTEE: If your Topaz inlet liner does not perform to your expectations for any reason, simply contact Restek Technical Service or your local Restek representative and provide a sample chromatogram showing the problem. If our GC experts are not able to quickly and completely resolve the issue to your satisfaction, you will be given an account credit or replacement product (same cat.#) along with instructions for returning any unopened product. (Do not return product prior to receiving authorization.) For additional details about Restek's return policy, visit www.restek.com/warranty.

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