



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.





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.

Patented

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.

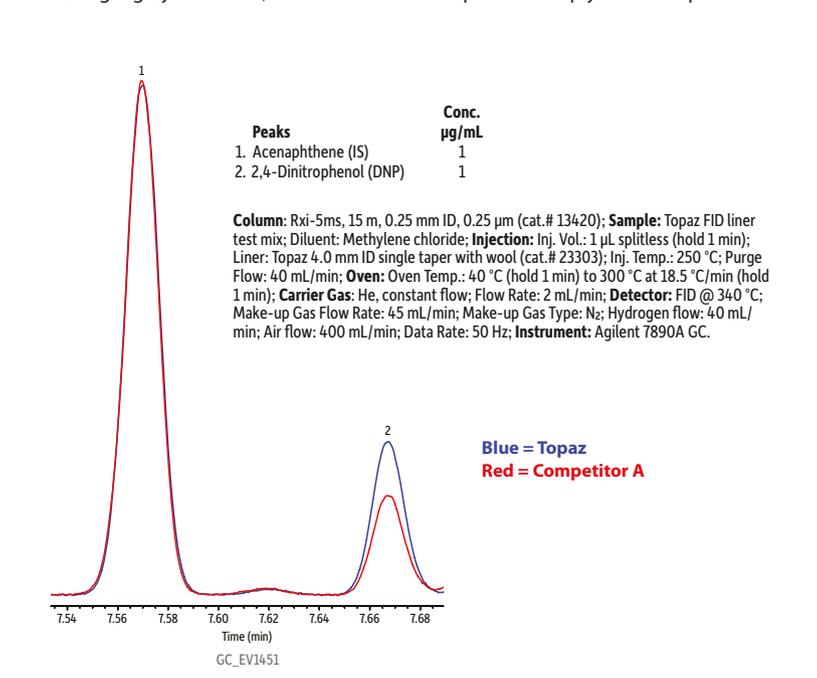


Figure 2: Regardless of your industry, carbaryl is an indicator of whether a liner has the inertness needed for trace-level work. Once again, Topaz outperforms the competition.

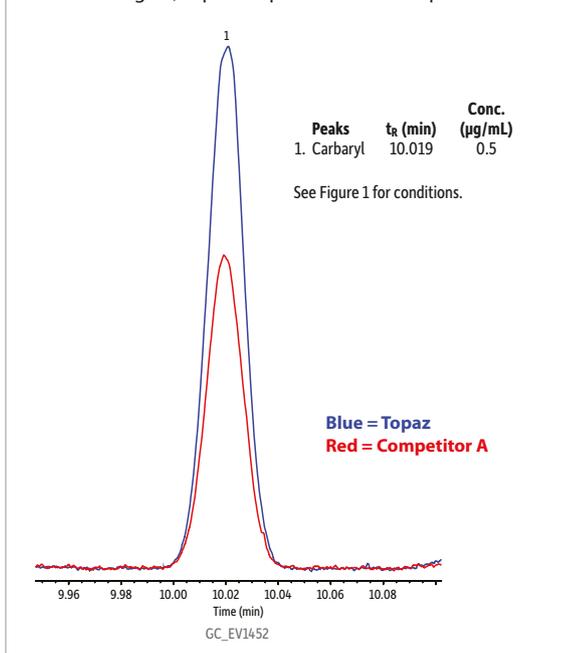
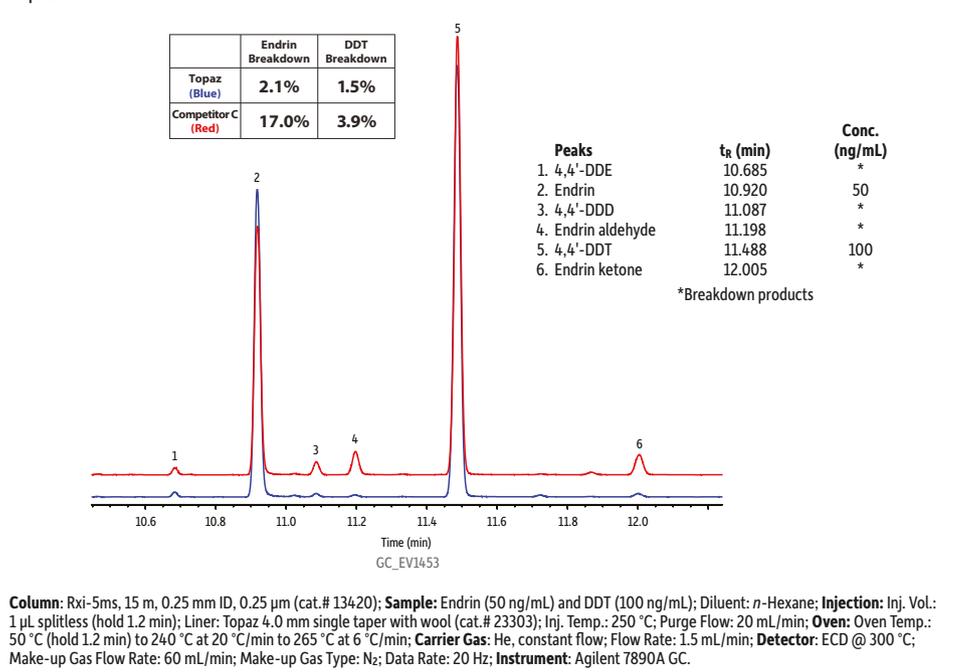


Figure 3: Government regulations can have very strict requirements for maximum analyte breakdown. For example, EPA method 8081 requires no more than 15% endrin and DDT breakdown. No problem with Topaz liners.



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.

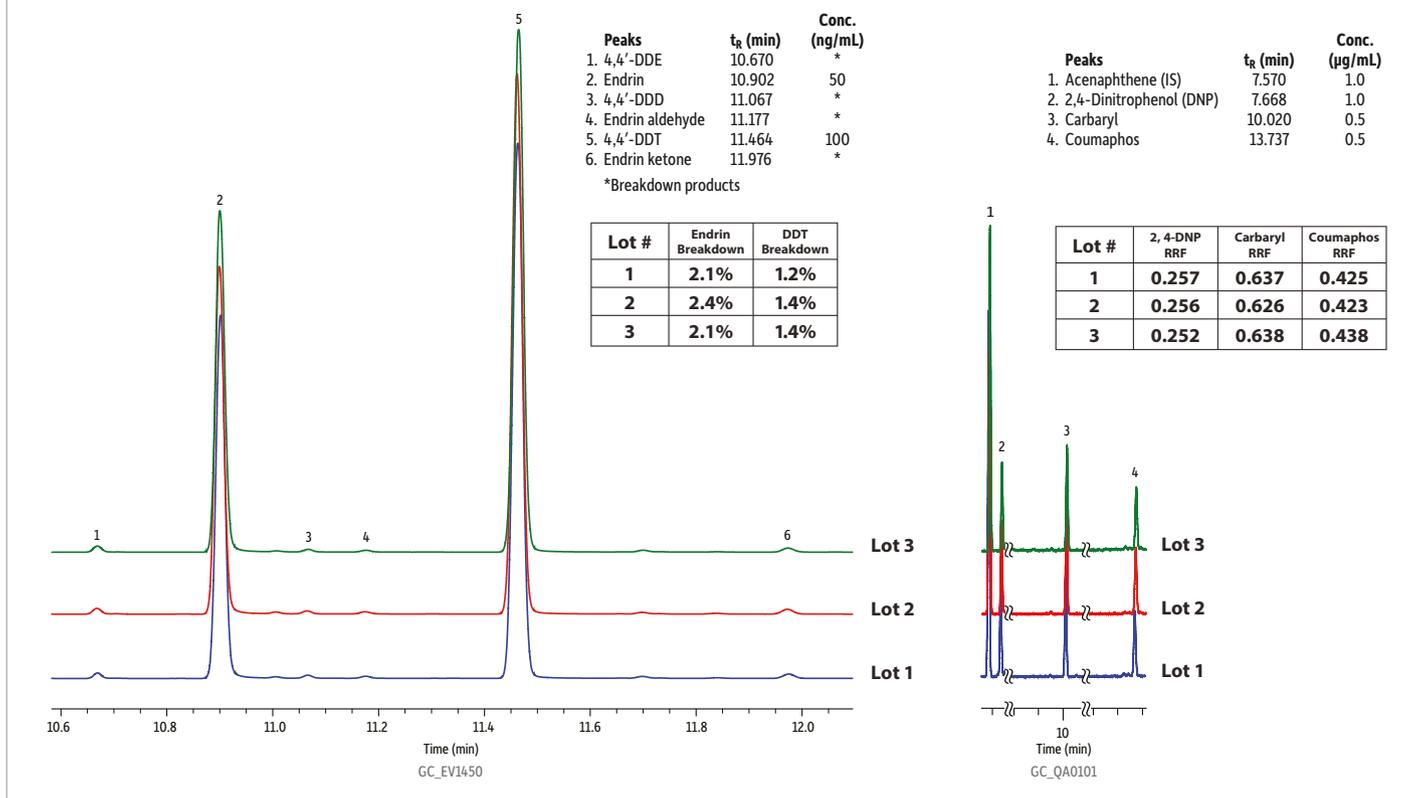
With deactivated Topaz liners, you prevent unwanted chemical interactions and minimize breakdown, which improves your data quality and dependability, and reduces instrument downtime. Even for low-level GC analysis of highly sensitive compounds—like 2,4-DNP, carbaryl, endrin, and DDT—these highly inert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

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 Flow Rate:** 60 mL/min; **Make-up Gas Type:** N₂; **Data Rate:** 20 Hz; **Instrument:** Agilent 7890A GC.

Instrument Conditions for GC_QA0101:

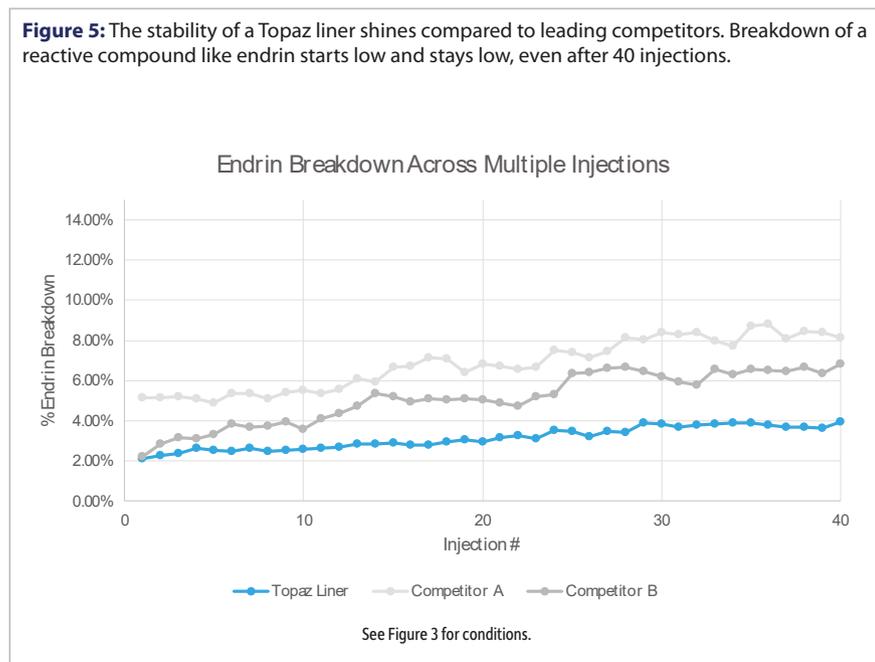
Column: Rxi-5ms, 15 m, 0.25 mm ID, 0.25 µm (cat.# 13420); **Sample:** Topaz liner FID test mix; Diluent: Methylene chloride; **Injection:** Inj. Vol.: 1 µL splitless (hold 1 min); Liner: Topaz 4.0 mm single taper liner with wool; **Inj. Temp.:** 250 °C; **Purge Flow:** 40 mL/min; **Oven:** Oven Temp.: 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.

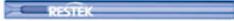
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Topaz Inlet Liners for Agilent GCs

Topaz Inlet Liners for Agilent GCs Equipped with Split/Splitless Inlets: Split Injection

| | 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 |

Topaz Inlet Liners for Agilent GCs Equipped with Split/Splitless Inlets: Splitless Injection

| | ID x OD x Length | Similar to Agilent Part # | qty. | cat.# |
|--|---------------------------|--|-------|-------|
|  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 |
|  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 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 |
|  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 |

Topaz Inlet Liners for Agilent GCs Equipped with Split/Splitless Inlets: Split or Splitless Injection

| | ID x OD x Length | Similar to Agilent Part # | qty. | cat.# |
|--|---------------------------|--|-------|-------|
|  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 |
|  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 |

Patent pending

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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 |
| Topaz Inlet Liners for Agilent GCs Equipped with Split/Splitless Inlets: 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 Liner (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 |

Patent pending

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

Topaz Inlet Liners for Bruker/Varian GCs

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| Topaz Inlet Liners for Bruker/Varian GCs Equipped with 1177 Split/Splitless Inlets | | ID x OD x Length | Similar to Bruker/Varian Part # | qty. | cat. # |
|--|--|---------------------------|---------------------------------|-------|--------|
|  | 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 Bruker/Varian GCs Equipped with SPI Inlets | | ID x OD x Length | Similar to 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 Bruker/Varian GCs Equipped with 1078/1079 Inlets | | ID x OD x Length | Similar to 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 Top Taper | 2.0 mm x 5.0 mm x 54 mm | 392611947 | 5-pk. | 23463 |
|  | 0.75 mm ID Straight 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 |

Patent pending







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 DANI GCs

| Topaz Inlet Liners for DANI GCs | | ID x OD x Length | qty. | cat.# |
|---|---|---------------------------|-------|-------|
|  | 0.8 mm ID Straight Liner | 0.8 mm x 6.0 mm x 70 mm | 5-pk. | 23293 |
| | 0.8 mm ID Straight Liner (includes: ferrule set) | 0.8 mm x 6.0 mm x 70 mm | 5-pk. | 23286 |
|  | 2.0 mm ID Straight Liner | 2.0 mm x 6.0 mm x 70 mm | 5-pk. | 23292 |
| | 2.0 mm ID Straight Liner (includes: ferrule set) | 2.0 mm x 6.0 mm x 70 mm | 5-pk. | 23285 |
|  | 2.2 mm ID Straight Liner w/Wool | 2.2 mm x 4.0 mm x 85.7 mm | 5-pk. | 23291 |
|  | 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 (includes: ferrule set) | 4.0 mm x 6.0 mm x 70 mm | 5-pk. | 23287 |
|  | 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 |

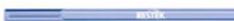
Topaz Inlet Liners for PerkinElmer GCs

| Topaz Inlet Liners for PerkinElmer Auto SYS and Clarus 580/680 GCs Equipped with Split/Splitless Inlets: Split Injection | | 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 |
| Topaz Inlet Liners for PerkinElmer Auto SYS and Clarus 580/680 GCs Equipped with Split/Splitless Inlets: Splitless Injection | | ID x OD x Length | Similar to PerkinElmer Part # | qty. | cat.# |
|  | 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 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 |

Patent pending

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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: Split Injection | | 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 at Bottom | 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 |
| Topaz Inlet Liners for Shimadzu 17A, 2010, and 2014 GCs Equipped with Split/Splitless Inlets: Splitless Injection | | ID x OD x Length | Similar to Shimadzu Part # | qty. | cat.# |
|  | 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 at Top | 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 |
| Topaz Inlet Liners for Shimadzu 17A, 2010, and 2014 GCs Equipped with Split/Splitless Inlets: Split or Splitless Injections | | ID x OD x Length | Similar to Shimadzu Part # | qty. | cat.# |
|  | 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 |

Patent pending

COLUMN INSTALLS THIS END

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: Split Injection

| | 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 |

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

| | ID x OD x Length | Similar to Thermo Part # | qty. | cat.# |
|--|--------------------------|--------------------------|-------|-------|
|  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 GCs Equipped with Split/Splitless Inlets: Split Injection

| | 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 |

Topaz Inlet Liners for Thermo Scientific TRACE 1300/1310 GCs Equipped with Split/Splitless Inlets: Splitless Injection

| | ID x OD x Length | Similar to Thermo Part # | qty. | cat.# |
|---|---------------------------|--------------------------|-------|-------|
|  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 |

Topaz Inlet Liners for Thermo Scientific TRACE 1300/1310 GCs Equipped with Split/Splitless Inlets: Split or Splitless Injection

| | ID x OD x Length | Similar to Thermo Part # | qty. | cat.# |
|--|---------------------------|--------------------------|-------|-------|
|  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 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 |

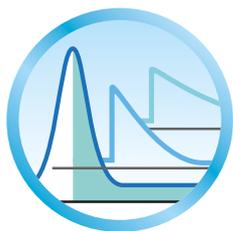
Patent pending

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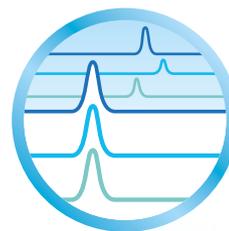
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