# SEPTACULAR!

Precision-molded, low-bleed
septa from Restek.



RESTEK

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# AVOID SEPTUM PROBLEMS

### Septum Handling

All septa, regardless of their composition, puncturability, or resistance to thermal degradation, will be a source of problems if they are mishandled. Always use clean forceps or wear clean cotton gloves when handling septa; do not handle them with bare fingers, nor with powdered latex gloves—contaminants such as finger oils, perfumes, make-up, fingernail polish, skin creams, hand soaps, and talcum can be absorbed into the septum and will bleed from the septum during your analyses.

Also, follow septum and instrument manufacturers' recommendations when installing a septum. Overtightening a septum nut invariably will reduce septum lifetime by increasing septum coring and splitting problems.

### Septum Bleed

All septa contain various amounts of volatile materials (e.g., silicone oils, phthalates) that can be released when the septum is heated to analysis temperatures. Septum bleed occurs when these volatiles from the septum collect on the column, then elute from the column and create baseline disturbances or extraneous (ghost) peaks in the chromatogram. This problem is prevalent in temperature-programmed analyses, because the septum volatiles collect on the column during the oven cool-down and initial hold periods. Capillary columns require much lower gas flow rates than packed columns, therefore septum volatiles are more concentrated, and bleed problems are more pronounced in capillary GC systems.

Because most GCs are equipped with a septum purge, septum bleed generally will disappear within 30 minutes after installing a new septum and exposing it to normal injector temperatures. All Restek septa eliminate this conditioning period because they are preconditioned and can be used without delay.

### Why are Low-Bleed Septa Important?

Either baseline rise or extraneous peaks caused by septum bleed can interfere with identification and quantification of target analytes. And, because septum bleed is inconsistent, method reproducibility can be a problem. Using low-bleed septa can minimize these effects and help produce more reliable results.

### SEPTUM HANDLING TIPS

- Handle septa carefully, to prevent contamination.
- Minimize bleed—use preconditioned, low-bleed septa.
- Follow septum and instrument manufacturers' recommendations.

### Why Does Septum Puncturability Matter?

A septum that can be penetrated cleanly and easily by a syringe needle has a longer life, and consistent injections made through such a septum help ensure accurate results. The soft silicone rubber from which all Restek septa are manufactured is specially formulated for chromatographic performance, which ensures our septa are easy to puncture.

# HANDY
## septum size chart

| Instrument | Septum Diameter (mm) |
|---|---|
| **Agilent (HP)** | |
| 5880A, 5890, 6890, 6850, PTV | 11 |
| 5700, 5880 | 9.5/10 |
| On-Column Injection | 5 |
| **CE Instruments (TMQ)** | |
| TRACE™ GC | 17 |
| **Finnigan (TMQ)** | |
| GC 9001 | 9.5 |
| GCQ | 9.5 |
| GCQ w/TRACE™, PTV | 17 |
| QCQ™ | 9.5 |
| TRACE™ 2000 | 9.5 |
| **Fisons/Carlo Erba (TMQ)** | |
| 8000 series | 17 |
| **Gow-Mac** | |
| 6890 series | 11 |
| All other models | 9.5 |
| **PerkinElmer** | |
| Sigma series | 11 |
| 900,990 | 11 |
| 8000 series | 11 |
| Auto SYS™ | 11 |
| Auto SYS™ XL | 11 |
| **Pye/Unicam** | |
| All models | 7 |
| **Shimadzu** | |
| All models | Plug |
| **SRI** | |
| All models | Plug |
| **Tracor** | |
| 540 | 11.5 |
| 550,560 | 9.5 |
| 220,222 | 12.5 |
| **Varian** | |
| Injector type: | |
| Packed column | 9.5/10 |
| Split/splitless | |
| 1078/1079 | 10/11 |
| 1177 | 9 |
| 1075/1077 | 11 |

### What Septum Configurations are Available, and for Which GCs?

Restek has fashioned septa for all major brands of gas chromatographs and injectors. Use the septum size chart to determine the septum diameter for your instrument, or measure an old septum if your model is not listed.

### Which Septa Should I Use?

Thermolite® septa are a proven low-bleed champion. With a maximum temperature of 340°C, there are very few applications for which Thermolite® septa are not suitable.

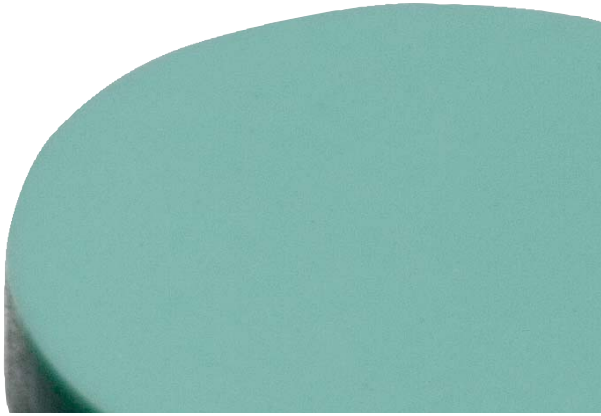
IceBlue™ septa are ideal for analysts using inlet temperatures of 250°C or below, or using solid phase microextraction (SPME) sampling techniques. IceBlue™ septa will accommodate puncturing from the large needles used in SPME, and still assure consistent injections and long lifetime.

BTO® septa are bleed and temperature optimized with a maximum temperature of 400°C, for the most demanding GC and GC/MS applications. They retain remarkable softness and puncturability at high temperatures. The CenterGuide™ can help reduce coring when used with tapered (rounded-tip) needles.

**Thermolite® Septa**
Usable to 340°C

**IceBlue® Septa**
Usable to 250°C

**BTO® Septa**
Usable to 400°C



## Thermolite® Septa

- Precision molding assures consistent, accurate fit.
- Usable to 340°C inlet temperature.
- Excellent puncturability.
- Preconditioned and ready to use.
- Do not adhere to hot metal surfaces.
- Packaged in non-contaminating glass jars.

| Septum Diameter | 25-pk. | 50-pk. | 100-pk. |
|---|---|---|---|
| 5mm (3/16") | 27120 | 27121 | 27122 |
| 6mm (1/4") | 27123 | 27124 | 27125 |
| 7mm | 27126 | 27127 | 27128 |
| 8mm | 27129 | 27130 | 27131 |
| 9mm | 27132 | 27133 | 27134 |
| 9.5mm (3/8") | 27135 | 27136 | 27137 |
| 10mm | 27138 | 27139 | 27140 |
| 11mm (7/16") | 27141 | 27142 | 27143 |
| 11.5mm | 27144 | 27145 | 27146 |
| 12.5mm (1/2") | 27147 | 27148 | 27149 |
| 17mm | 27150 | 27151 | 27152 |
| Shimadzu Plug | 27153 | 27154 | 27155 |

## IceBlue™ Septa

- Precision molding assures consistent, accurate fit.
- Usable to 250°C inlet temperature.
- General-purpose septa.
- Excellent puncturability.
- Preconditioned and ready to use.
- Do not adhere to hot metal surfaces.
- Packaged in non-contaminating glass jars.
- Ideal for SPME.

| Septum Diameter | 50-pk. | 100-pk. |
|---|---|---|
| 9mm | 27156 | 27157 |
| 9.5mm (3/8") | 27158 | 27159 |
| 10mm | 27160 | 27161 |
| 11mm (7/16") | 27162 | 27163 |
| 11.5mm | 27164 | 27165 |
| 12.5mm (1/2") | 27166 | 27167 |
| 17mm | 27168 | 27169 |
| Shimadzu Plug | 27170 | 27171 |


**DID YOU KNOW?**
Restek offers an extensive selection of inlet liners for all major gas chromatographs and injectors, including innovative Siltek® deactivated liners. For details, request the *Inlet Supplies Guide* (lit. cat. #59893C) or visit us online at **www.restek.com**

## Inlet Liner Removal Tool

Easily remove liner from injector—no more burned fingers.

| qty. | cat.# |
|---|---|
| 3-pk. | 20181 |



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## BTO® Septa

- Precision molding assures consistent, accurate fit.
- CenterGuide™ design requires less force for initial penetration.
- Usable to 400°C inlet temperature.
- Preconditioned and ready to use.
- Do not adhere to hot metal surfaces.
- Packaged in non-contaminating glass jars.
- Each batch GC-FID tested.
- Bleed and temperature optimized; ideal for demanding GC and GC/MS applications.

| Septum Diameter | 50-pk. | 100-pk. |
|---|---|---|
| 5mm CenterGuide™ | 27100 | 27101 |
| 6mm (1/4") | 27102 | 27103 |
| 9mm CenterGuide™ | 27104 | 27105 |
| 9.5mm (3/8") | 27106 | 27107 |
| 10mm | 27108 | 27109 |
| 11mm (7/16") CenterGuide™ | 27110 | 27111 |
| 11.5mm CenterGuide™ | 27112 | 27113 |
| 12.5mm (1/2") CenterGuide™ | 27114 | 27115 |
| 17mm CenterGuide™ | 27116 | 27117 |
| Shimadzu Plug | 27118 | 27119 |

## Merlin Microseal™ Septa for Agilent GCs

- Allow operation from 2 to 100psi (400 Series) or 2 to 30psi (300 Series).
- Top wiper rib improves resistance to particulate contamination; can be taken apart for cleaning.
- High resistance to wear—greatly reduces shedding of septum particles into the injection port liner, eliminating a major source of septum bleed and ghost peaks.
- Longer life—reduces the risk of septum leaks during extended automated runs.
- Maximum temperature—Agilent 6890, 5890 Series II: 325°C; Agilent 5890A: 300°C.

### Microseal™ High-Pressure Septa, 400 Series

| Microseal™ High-Pressure Septa, 400 Series (100psi) | Merlin# | Similar to Agilent# | cat.# |
|---|---|---|---|
| Standard kit (nut, 2 septa) | 404 | Not offered | 22810 |
| Starter kit (nut, 1 septum) | 405 | 5182-3442 | 22811 |
| Nut kit (1 nut, fits 300 & 400 series septa) | 403 | 5182-3445 | 22809 |
| High-pressure replacement septum (1 septum) | 410 | 5182-3444 | 22812 |

### Microseal™ Septa, 300 Series

| Microseal™ Septa, 300 Series (30psi) | Merlin# | Similar to Agilent# | cat.# |
|---|---|---|---|
| Standard kit (nut, 2 septa) | 304 | 5181-8833 | 22813 |
| Starter kit (nut, 1 septum) | 305 | 5181-8816 | 22814 |
| Microseal replacement septum (1 septum) | 310 | 5181-8815 | 22815 |
| Replacement PTFE washers (2-pk.) | 311 | 5182-0853 | 22808 |

## Septum Puller

- Use hooked end for removing septa and O-rings; pointed end works well for removing stuck ferrules or fragments.
- Keep several on hand in your laboratory—can be used in many different ways.


Remove septum without damaging an expensive weldment.

Dislodge a stuck ferrule quickly and easily—without scoring the fitting.

| Description | qty. | cat.# |
|---|---|---|
| Septum Puller | ea. | 20117 |



Lit. Cat.# 580088