



RedLite™ & Thermolite® Restek - Still the Low-Bleed Champs!

Introduction

How do you know which septa will work best when every manufacturer claims to have the best? Restek investigated the variables in septa (i.e., off-gassing, puncturability, heat tolerances, size or fit, and reproducibility from lot-to-lot) to determine which brand gave the best results for the analysis and detector used. Because of the chemical additives used in the manufacturing process, all septa don't exhibit the same results

from one detector to another. Septa contamination is more apparent with splitless injections with long hold times. With split injections, the contamination is swept out the purge and split lines and is less noticeable.

Experiment

Production lots of each of the manufacturers "high temperature" septa were tested under identical conditions using an FID and ECD detector to determine the lowest bleed septa. Each septa lot number

was recorded (excluding Chromseal™ 9001 HT which had no listed lot number) to ensure traceability and reproducible results. The following results compare bleed from several commercially available septa, many of which are marketed specifically as "low-bleed" or "high-temperature" brands.

Conclusion

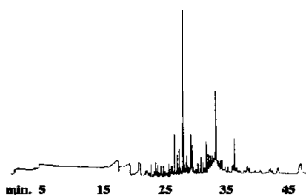
The results indicate that Restek's Thermolite™ and RedLite™ septa exhibit less bleed than the other

gies "high-temperature" septa. Restek's quality control ensures consistent quality from batch-to-batch. Restek's septa exhibit less coring and fragmentation, remain pliable at high temperatures, and will not stick to the injector surface. So, if you're tired of the problems associated with your septa, try Restek's quality septa.

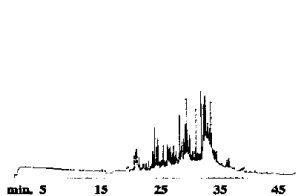
They're a knockout!

Figure 1
FID BLEED - Regardless of the variables Restek' and RedLite'™ septa are the low-bleed champs!

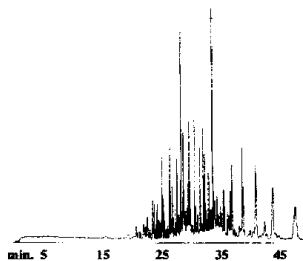
Restek Thermolite™ Septa
(Lot.# 178)



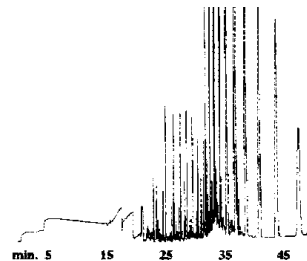
Restek RedLite™ Septa
(Lot.# 149)



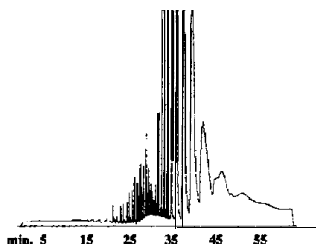
Baxter Septa 77
(Lot.# 0081)



Supelco Thermogreen* LB-2
(Lot.# 781-021c)



Chromacol Chromseal™
9001 HT Septa



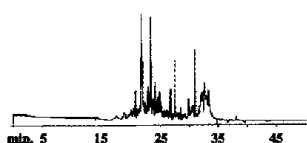
15m, 0.53mm ID, 1.0um Rtx™-5 (cat.# 10252)
Oven **temp.:** 40°C (hold 15 min.) to 300°C @ (hold 40 min.), **Inj./det. temp.:** 250°C/300C,
Carrier gas: hydrogen, Linear **velocity:**
Splitless hold time: 15 min., **Split vent:** 40
Septum purge: 3.5 ml/min., **FID range:** 5



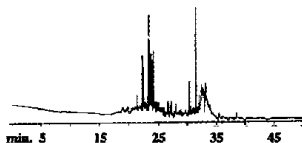
Figure 2

ECD BLEED – Even a highly sensitive ECD can't make Restek's Thermolite™ or RedLite™ look bad!

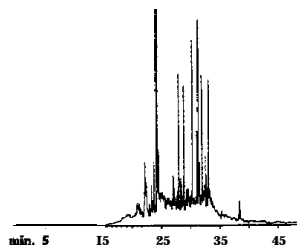
Restek Thermolite™
(Lot# 178)



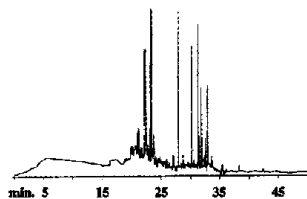
SeptaRestek RedLite™
(Lot # 149)



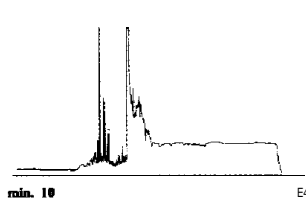
SeptaBaxter septa 77
Lot# 0081)



Supelco Thermogreen™ LB-2
[Lot#781-021c)



Chromacol Chromseal™
9001 HT Septa



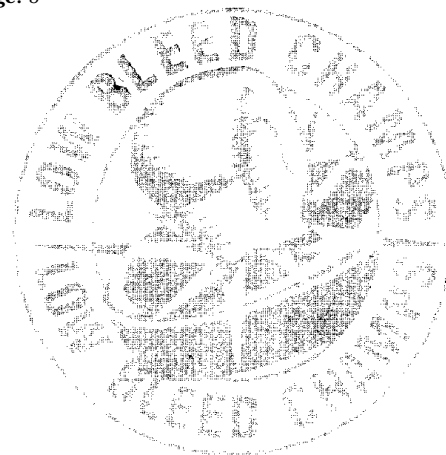
15m, 0.53mm ID, 1.0um
Rtx™-5 (cat.# 10252)
Oven temp.: 40°C (hold
15 min.) to 300°C @
15°C/min. (hold 40 min.).
Inj./det. temp.: 250°C/
300% **Carrier gas:**
helium, **Linear velocity:**
40cm/sec., **Splitless hold**
time: 15 min., **Split vent:**
40 ml/min., **Septum**
purge: 3.5 ml/min., **ECD**
range: 5

Testing Parameters for Comparison Studies:

A clean, deactivated 4mm ID gooseneck splitless sleeve was placed into the GC inlet. A blank run was made to confirm system cleanliness. After verifying system cleanliness, a sample unconditioned septa was cored from the centerface of each septum and cut in half. Using clean forceps, the two pieces were inserted into the clean, conditioned splitless sleeve. The sleeve was placed into the cooled inlet (approximately 30 to 40°C) of a HP 589011 GC. The system was thoroughly leak-checked using an electronic leak detector. Next, the injection port was heated to 250°C while the GC oven was held at 40°C. After 15 minutes at 40°C, the oven was programmed to 300°C @ 15°C/minute to elute the bleed volatiles that had accumulated on the head of the column. After the 15-minute initial hold, the inlet system was cooled to prevent additional accumulation of septum bleed in the inlet sleeve. At the end of each run, the septum was removed from the sleeve and a blank run was performed to verify system cleanliness and prevent cross-contamination. This is the standard quality assurance testing procedure used by Restek for Thermolite™ and RedLite™ septa.

Septa Product Listing

Size	Thermolite®	RedLite®
9.5mm 11mm	25pack	25- pack
	20359	22300
	20363	22306
9.5mm 11mm	50- pack	50- pack
	20360	22301
	20364	22307
9.5mm 11mm	100- pack	100- pack
	20361	22302
	20365	22308



**To reduce the risk of GC downtime,
request Restek's Guide to
Minimizing Septa Problems.**

Othersizes are available.

Call your local distributor for a complete listing.