All liners are
100%
deactivated

All liners are shipped intermediate polarity (IP) deactivated unless otherwise requested.

free literature

A Guide to Direct and On-column Flash Vaporization Injection

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Technical Guide
lit. cat.# 59882A

A) Standard Uniliner®

B) Open-Top Uniliner®

C) Cyclo-Uniliner®

D) Drilled Uniliner®

hole near top

hole near bottom

Hole makes direct injection possible with EPC-equipped Agilent 6890 GCs!

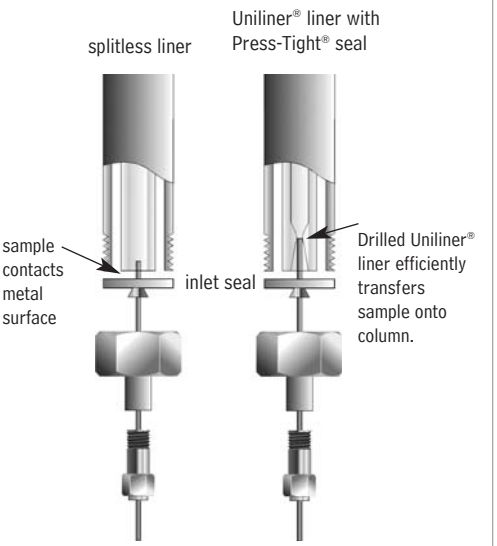
Direct Injection Mode Using a Uniliner® Liner — An Alternative to Splitless Injections!

Many problems associated with splitless analysis occur because there is a gap around the outside of the column and the inside of the liner. Sample vapors deposit on the metal inlet parts or fall below the tip of the column and are swept out of the split vent during the purge-on mode. The diagram illustrates how the gentle Press-Tight® taper in a Uniliner® liner eliminates sample contact with the hot, catalytic metal disk surface (inlet seal), by making a leak-tight connection between the column and liner.

A splitless injection mimics a direct injection when the inlet is configured to the purge-off mode. The purge-on mode simply sweeps the sample vapors that may have contacted the metal inlet seal away from the inlet. Analysts can replace a splitless liner with a Uniliner® liner and obtain additional benefits over a traditional splitless analysis. Adsorption of active compounds is greatly reduced, peak areas for higher molecular weight compounds are increased (i.e., less discrimination) and, because all of the sample is delivered to the head of the column, sensitivity is enhanced over conventional splitless analysis.

A Uniliner® liner can be used as a direct replacement for a splitless liner. It is easily installed in a splitless inlet in almost the same manner as a splitless liner, except that it must be operated continuously in the purge-off mode. The tight seal between the column inlet and the Press-Tight® taper prevents the sample from escaping out of the split vent. Uniliner® liners should be operated at column flow rates between 5 and 10cc/min., to minimize peak tailing and to sharpen early-eluting peaks. The taper is designed to accommodate 0.32 or 0.53mm ID columns. Request Restek's Guide to Direct/On-Column Flash Vaporization Injections (lit. cat.# 59882A) for more information on optimizing direct injections.

A Uniliner® liner prevents the sample from contacting metal parts at the base of a splitless injection port. This eliminates many problems, such as reduced response for high molecular weight compounds, adsorption, and catalytic desorption in the inlet, providing overall higher sensitivity.



Inlet Liners for Direct Injection

A) Standard Uniliner® Liner

The buffer volume chamber contains the sample vapor cloud and prevents contact with metal injection port parts. Peak tailing is reduced and larger injections can be made. Because of the hourglass design, samples should be relatively clean or dirt might be funneled into the column inlet.

B) Open-Top Uniliner® Liner

Open-top Uniliner® liners are ideal for extremely dirty samples because they are packed with wool that traps dirt and sample residue. Contaminated wool is easily replaced and the liner can be cleaned with a nylon brush or pipe cleaner.

C) Cyclo-Uniliner® Liner

The glass spiral provides an excellent vaporization surface for high and low molecular weight samples. Dirt is trapped on the first turn of the spiral, reducing subsequent residue/sample interaction. In comparison to liners packed with wool, Cyclo-Uniliner® liners allow up to five times as many dirty sample injections before calibration curves degrade.

D) Drilled Uniliner® Liner

Ideal for use with EPC-equipped GC systems. The hole equalizes pressure and maximizes sensitivity. The Drilled Uniliner® with the hole near the bottom is recommended for semivolatile analysis or when compounds of interest could be affected by a tailing solvent peak. The Drilled Uniliner® with the hole near the top is recommended for aqueous injections, chlorinated pesticides, as well as analysis in which the compounds of interest elute away from the solvent peak.