

# Installation Instructions for 5mm Uniliner® Inlet Liner with Adaptor in 1/4-inch Injection Port

(1/4-inch Inlet Liner Adaptor—cat.# 20310, 20311; 1/4-inch Siltek® Inlet Liner Adaptor—cat.# 22282)

## Overview

Convert a 1/4-inch packed column injection port to accept a 0.32 or 0.53mm ID capillary column, using a Uniliner® Inlet Liner and Uniliner® Inlet Liner Adaptor. This conversion allows either direct or on-column injections, and the leak-tight connection and expansion chamber deliver superior chromatographic performance.

## Installation Instructions

1. Select either the on-column or direct injection mode and carefully slide the 5mm Uniliner® Inlet Liner into the adaptor, per illustration below.\*

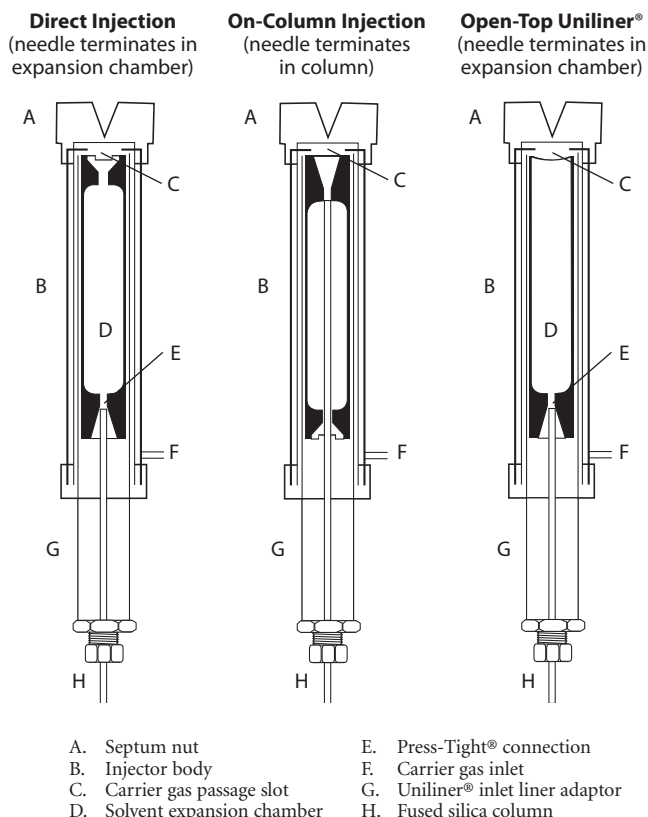
*\*Uniliner® liners for 0.32mm ID columns, and the Open-Top and Cyclo versions, can only be installed in the direct injection mode.*



2. Connect the Uniliner® Inlet Liner Adaptor to the injection port, using the 1/4-inch stainless steel nut provided. Tighten the nut 1/4-turn past finger-tight.

**CAUTION:** Do not use Vespel® or metal ferrules on the adaptor. They constrict the ID of the 1/4-inch tubing and prevent the liner from sliding freely inside.

3. Cut approximately 10cm from each column end, using a ceramic wafer (cat.# 20116), and pointing the column end down to prevent ferrule fragments from falling inside the column. Slide the 1/16-inch nut, followed by the 0.8mm ID graphite ferrule (each is provided with the liner adaptor), onto the column end. If using a 0.32mm ID column, you will need to purchase a 0.5mm ID ferrule separately.



4. Cut an additional 10cm from the column. Examine the column end with a pocket magnifier (cat.# 20124) to make sure the cut is square. Failure to obtain a square cut will create an inadequate seal and will produce poorly shaped peaks.
5. Insert the column end into the Uniliner® Inlet Liner Adaptor. Gently push the column end against the seating surface of the liner while supporting the liner. **Do not push the liner against the top of the injection port. Leave approximately a one inch gap between the septum and the liner until the ferrule has been seated. If the ferrule is not seated properly, subsequent tightening will crush the column end inside the liner taper and will produce broad, tailing solvent peaks.**

Tighten the 1/16-inch nut and graphite ferrule onto the Uniliner® Inlet Liner Adaptor, to seat the ferrule. The column should be held firmly by the graphite ferrule and should not slide freely when gentle downward pressure is applied.

- Once the ferrule has been seated, loosen the nut and ferrule and slowly push the column into the injection port until the Uniliner® Inlet Liner touches the inside top of the injection port. When you feel it touch, lower the liner 1/32-inch. Retighten the nut and ferrule until the column can no longer be moved by using moderate force. A leak-free connection usually is assured if the column does not move up or down with moderate force.

**Note: If you install the liner too far into the injection port, the upward movement created by tightening the graphite ferrule may crush the column end against the liner's seating surface. The solvent peak test described in Restek's online Column Installation Guide ([www.restek.com/guide\\_cap.asp](http://www.restek.com/guide_cap.asp)) will indicate if this has occurred.**

- Turn on the carrier gas and set the flow rate to approximately 5-10cc/min. Table 1 gives approximate column head pressures to deliver a 5-10cc/min. flow rate. Some GC detectors are not air-tight; therefore, the carrier gas flow should be measured at the column end before installing it in the detector. Confirm a leak-free connection, using an electronic leak detector (Restek Leak Detector, cat.# 22839). Do not use liquid leak detectors because they can contaminate or damage the column.
- Install the column outlet according to your make-up gas instructions and GC instrument manual. Confirm a leak-free connection, using an electronic leak detector (Restek Leak Detector, cat.# 22839). Do not use liquid leak detectors because they can contaminate or damage the column.
- Perform the methane test and the solvent peak test as described in Restek's online Column Installation Guide ([www.restek.com/guide\\_cap.asp](http://www.restek.com/guide_cap.asp)) to confirm installation integrity before conditioning the column or analyzing samples.

**Table 1** Approximate column head pressures to produce a 5-10cc/min. carrier gas flow (helium or hydrogen carrier gas).

Column Length	Column Inside Diameter	
	0.32mm ID	0.53mm ID
15m	3psig	2psig
30m	8psig	4psig
60m	16psig	8psig
105m	30psig	14psig

#### Intermediate Polarity Deactivated Uniliner® Inlet Liners

Uniliner ID	Description	cat.#	
		each	5-pk.
0.32mm	Uniliner—85mm long (DI only*)	20308	20309
0.53mm	Uniliner—60mm long	20902	20903
0.32/0.53mm	Open-Top Uniliner (DI only)	20315	20316
0.32mm	Cyclo Uniliner (DI only)	20319	20320

\*DI—direct injection.

#### Siltek® Deactivation

Maximize the inertness of your sample pathway!

- Minimize breakdown.
- Low bleed.
- Thermally stable.

The Siltek® deactivation process (US Patent 6,444,326) produces a highly inert surface that features high temperature stability, extreme durability, and low bleed. Try Siltek® liners, guard columns, connectors, FID jets, and more, for better recovery of sample analytes.

*For Siltek® treated inlet liners, add the corresponding suffix number to the liner catalog number.*

qty.	Siltek liner
each	-214.1
5-pk.	-214.5
25-pk.	-214.25

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**Call Technical Service at 800-356-1688 or 814-353-1300, ext. 4 (or your Restek representative)  
if you have any questions about this product or any other Restek product.**



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