COLUMN INSTALLATION, STORAGE AND CHEMICAL CAPABILITY GUIDE

1 PRELIMINARY CHECK

Check the septa, gas traps for expiration and the flows of the makeup and detector gases. Clean or replace the injector liner, if needed.

2 IINSTALL COLUMN INTO THE INJECTOR

Your column is sealed immediately after the MEGA final test. Cut 2-3 cm from both ends, preferably using a knife for glass or a silicon wafer to obtain a clean sqaure end. Place a column nut and ferrule over one end of the column. Ferrule I.D. Is selected based on the diameter of the capillary column. Cut the end of the column after ferrule placement. Install the column into the injector. The optimal insertion distance of the column into the injector is different for each model of GC. Consult the GC's instruction manual for for the proper insertion depth and technique.

3 CARRIER GAS AND FLOW CHECKS

Turn on tha carrier gas. Adjuste the head pressure to obtain a reasonable flow rate of carrier gas. Check the column flow by dipping the column end into a small vial containing a solvent. A stream bubbles should be observed. If not, check the possible leaks in the injector or for any signof damage to the column. High purity helium or hydrogen are the preferred carrier gases for capillary columns. Use gas purity traps on the carrier gas lines to extend column lifetime and to minimize background noise.

4 INSTALL COLUMN INTO DETECTOR

Install the column into detector following all of the installation precautions as stated in the previous injector installation section (step 2). Inspect the GC system for leaks before heating the column for the first time.

5 COLUMN CONDITIONING

Once the column has been checked for proper installation and absence of leaks, it is ready for conditioning. Heat the column to its isothermal upper temperature limit or a temperature 10-20℃ above the highest operating tempera ture of your particular method for 4-6 hours. Do not exceed the upper limit or column damage will results.

6 GROB TEST (OR SPECIAL MIXTURE TEST)

A test mixture should be injected to further determine column installation and performance. Inject the GROB mixture (or the special mixture test in the box) following the instructions on capillary column test chromatogram insterted into the column package.

7 COLUMN STORAGE

When a column is not in use, MEGA reccomends the column ends be sealed. Seal the column ends with GC septa and return the column to its original box. Upon re-installation, cut ends to insure taht a small piece of septum has not be left in the column.

8 COLUMN CLEANING

If chemical damage to the stationary phase does occur, try to remove the 0.5 – 1 m of the column (injection side). This will often restore column performance. The CROSSBOND columns are solvent proof. When you see a lost of efficiency or peaks tailing it could be possible to clean the column to solve the problem. Use Nitrogen (or another inert gas) to send into the column solvent trough the detector side. Usually you can use solvents at different polarity in the following order: hexane>methylene chloride>methanol<methylene chloride<hexane. Dry the column under Nitrogen and follow the step 5 for a new conditioning. Don't wash the column “NOT CROSSBOND” with solvent, he can destroy the stationary phase.

9 RETENTION GAP

When you must analyse dirty samples, MEGA recommended to use the retention gap: this device block the non-volatile compounds saving the column to contamination. The Retention Gap is connected to the column through Press-Fit Unions. When you see a lost of efficiency or peaks tailing the Retention Gap must be changed.

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