



Acetonitrile shortage:

ensure your supply and reduce costs with Merck narrowbore and Chromolith® HPLC columns

Today there is a serious supply shortage of acetonitrile, the most popular HPLC solvent.

Fortunately there are simple solutions to reduce acetonitrile usage.

Strategy 1

Save 44% acetonitrile without the need to re-validate pharmacopoeia methods !

By changing from 4 mm to 3 mm internal diameter columns the required flow rate is reduced by 44% while remaining within the guidelines of the European and US Pharmacopoeia.

3 mm id. columns are suitable for use with standard HPLC instruments as well as UHPLC and UPLC™'s (see the reference table on page 2)

Strategy 2

Save 100% acetonitrile by using Chromolith® HPLC columns with methanol as organic solvent

Chromolith® HPLC columns completely overcome the disadvantage of methanol – high back-pressure !

Using methanol, Chromolith® HPLC columns have absolutely the lowest back-pressure compared to other columns, typically 10-times lower than with UPLC™ columns – no problem for standard HPLC's and ideal for methods which must use 4.6 mm internal diameter columns.



Strategy 3

Use Strategies 1 and 2 together to achieve the optimum combination for acetonitrile reduction, faster analysis and rugged robust methods with Chromolith® columns

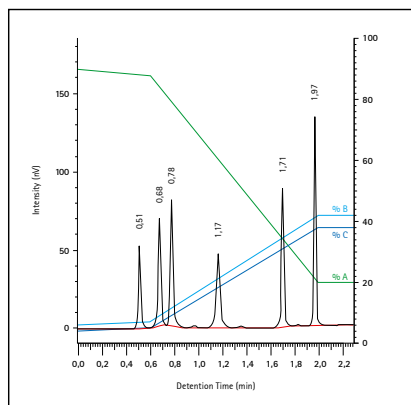


Fig. 1 shows a separation of six sulfonamides using a Chromolith® column after the column internal diameter was reduced from 4.6 mm to 3 mm and 50% of the acetonitrile used was replaced by methanol. The maximum column back-pressure was only 187 bar with 3 mL/min flow rate.

Analysis time 2.2 minutes and acetonitrile saving 50 %.

Such a method can be used with UPLC™, UHPLC or optimized standard HPLC instruments.

Table showing examples of „Acetonitrile-Saver“ columns

Standard 4 mm and 4.6 mm id columns				Acetonitrile saver columns			
Part Number	Length (mm)	Internal diameter (mm)	Column Type	Part Number	Length (mm)	Internal diameter (mm)	Savings in %
1.02129.0001	100	4.6	Chromolith® Performance RP-18e	1.52001.0001	100	3	57
1.51450.0001	50	4.6	Chromolith® Performance RP-18e	1.52007.0001	50	2	81
1.50252.0001	250	4	PUROSPHER® STAR RP-18 endcapped 5µm	1.50254.0001	250	3	44
1.50251.0001	125	4	PUROSPHER® STAR RP-18 endcapped 5µm	1.50253.0001	125	3	44
1.50251.0001	125	4	PUROSPHER® STAR RP-18 endcapped 5µm	1.50255.0001	125	2	75
1.50943.0001	125	4	LICHROSPHER® 100 RP-18 5µm	1.50159.0001	125	3	44
1.50983.0001	250	4	LICHROSPHER® 100 RP-18 5µm	1.50154.0001	250	3	44
1.50839.0001	250	4	LICHROSPHER® 60 RP-SELECT B 5µm	1.50155.0001	250	3	44
1.50981.0001	125	4	LICHROSPHER® 60 RP-SELECT B 5µm	1.50158.0001	125	3	44
1.50333.0001	250	4	LICHROSORB® RP-18 5µm	1.00423.7052	250	3	44

Footnote: the acetonitrile saving is biggest when 2mm id. columns replace with 4 mm or 4.6 mm id. giving 75% and 81% saving. However a method revalidation may be required and older instruments may need minor modification.

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