

Chromatography

Flash Chromatography



Flexible • Reliable • Reproducible
Secure • Expandable • Efficient

MACHEREY-NAGEL

www.mn-net.com



Challenges for modern Flash columns and systems:

- ◇ Maximum safety during use under pressure
- ◇ Increased column life time
- ◇ High separation efficiency
- ◇ Excellent reproducibility
- ◇ High loadability
- ◇ Easy and flexible mounting, even with different hardware

Our solution:

CHROMABOND® Flash Safety System

Can be used without problems as “stand alone“ system for any pump/detector/fraction collector combination with 1/4“-28 fittings

- ◇ Safety holder, available in 5 different sizes (90, 180, 240, 360, 750/1000 ml)
- ◇ Holder can be equipped with either luer lock inlet, 1/4“-28 screw or Swagelok® connection
- ◇ Cartridges with luer lock exit for a safe and pressure stable tube connection
- ◇ Maximum safety up to 9 bar
- ◇ Connecting accessories available



Holder 750 with cartridge (65 mm ID)



Holder 40 with cartridge (40 mm ID)

Alternative injection systems and methods

Liquid injection systems

- 1) 3 way valve (PTFE) with 1/4“-28 fittings
- 2) VICI low pressure valve with 1/4“-28 fittings and sample loop
- 3) Sample injection with syringe via 3 way valve



Solid phase injection systems

- 4) Solid phase injection system filled with CHROMABOND® XTR kieselguhr
- 5) Solid phase injection adaptors in different dimensions
- 6) Solid phase injection cartridges in different dimensions



Safety and column lifetime:

Both points are closely connected using the CHROMABOND® Flash Safety System. The metal casing around the cartridge increases the security for the user compared to pure plastic cartridges without casing.

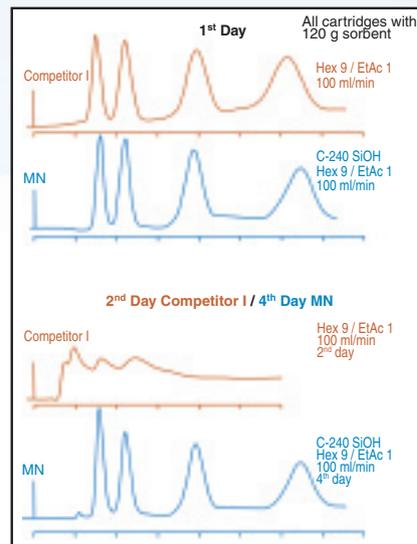
Our CHROMABOND® Flash Safety System is tested and proofed up to 9 bar. This increases the flexibility due to the use of a broader range of solvents (higher viscosity possible) and flow ranges (reduction of analysis time by higher flow rates). The metal casing inhibits the deformation or twisting of the cartridge and through this, avoids a damage of the packing by swelling or solvent effects. The increase of the cartridge lifetime can now be numbered in days, not only in hours or a few runs.



Casing with windows
(for 40 mm ID cartridges)

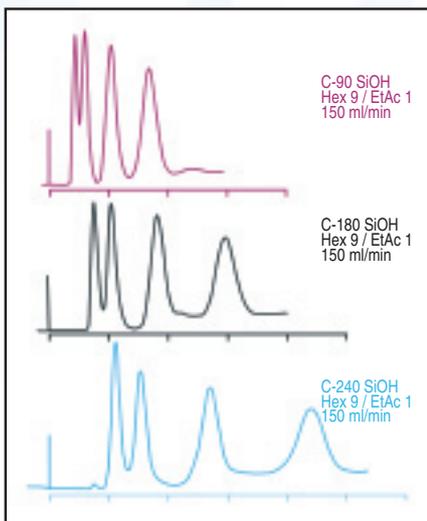


Holder 750
with window



Comparison of lifetime
between a covered and
a non covered cartridge

Separation efficiency and reproducibility:



Our optimised automatic packing process leads to an excellent packing quality, irrespective of the phase or particle size distribution (normal phase or reversed phase, spherical or irregular particles). MN, as a manufacturer of silicas, has decades of experience in the production of first class separation phases and columns. This leads to highest separation efficiencies of the columns, a constant back pressure (via controlled narrow particle size distribution) and good reproducibilities from cartridge to cartridge.

Different resolution using cartridges of different length

Loadability and easy and flexible mounting:

Due to the narrow particle size distribution, the excellent packing quality and the optimised separation phases (acid washed silica, reduced particulate matter) our cartridges can realize highest loadability at best possible separation efficiency. Additionally, the large range of different cartridge sizes and diameters eases to find the optimum in loadability for the given sample amount.

Loadability:

Difficult separation = low load ($\leq 1\%$ in g/g adsorbent)

Easy separation = high load ($\leq 10\%$ in g/g adsorbent)

We use the common 1/4"-28 fittings and luer locks for all connections.

Thus compatibility with very different hardware systems is given, making daily work a lot easier. Helpful in this case is our complete CHROMABOND® Flash starter kit.



7)



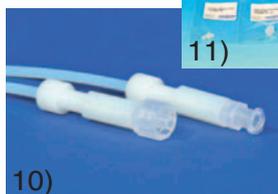
8)



9)



11)



10)



12)



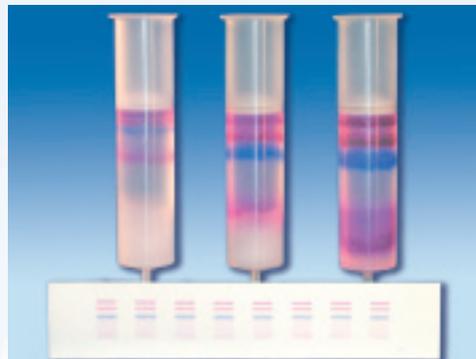
13)

- 7) holder 90 with syringe and 3 way valve
- 8) holder 180 with solid phase injection cartridge
- 9) holder 750 with solid phase injection cartridge
- 10) Luer lock connection with 1/4"-28 coupling
- 11) Flash starter kit
- 12) holder 90 with 3 way valve
- 13) Solid phase injection cartridge

Unique variety of phases:

As with our other CHROMABOND® SPE products we offer besides the standard adsorbents our whole range of stationary phases (more than 35, i.e. C18, C8, OH, Alox,...). Additionally you can choose from different particle sizes (12 – 130 µm) and pore sizes from 60 – 4000 Å. For high performance separations you can order columns packed with spherical NUCLEODUR® featuring very high separation efficiency and extremely increased lifetime.

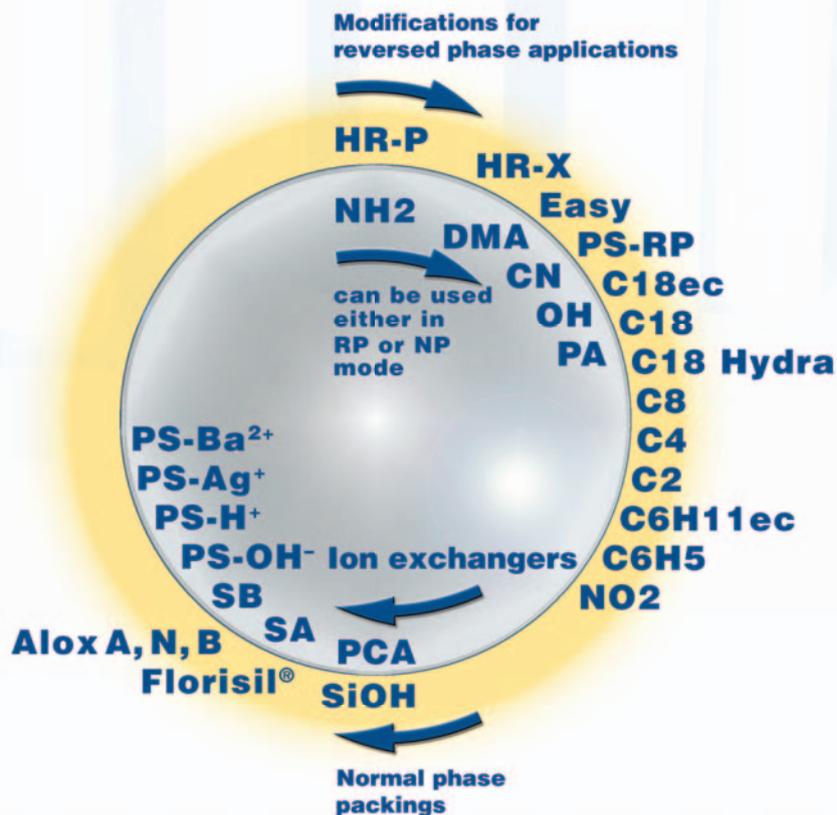
For the development of a selective and reproducible method in FLASH chromatography, it might be necessary to test a lot of eluent and/or adsorbent combinations by TLC. MN TLC plates and foils are coated with the same base silica, which is used in all CHROMABOND® Flash cartridges. This is a basic prerequisite for the reproducible transfer of the TLC separation to a Flash column, because the parameters are identical in both systems.



Phase selection:

All cartridges and columns listed in this brochure can be filled with all phases from our broad MN phase program. For an inquiry feel free to contact MACHEREY-NAGEL directly or one of our local distributors.

Phase summary of the possible packing materials and modifications



Solutions and cartridges for FLASH systems of TELEDYNE ISCO (Companion®), Biotage AB (Flash 12i™, FlashMaster™), Gilson (Aspec™):

This product program is designed for the usage directly in the mentioned FLASH systems (without additional connectors or capillaries)

Cartridges for the Biotage® FlashMaster™

Available in all current dimensions



CHROMABOND® Flash FM columns ▲ ■

Cartridges for the Biotage® Flash 12i™



CHROMABOND® Flash BT columns ■

Cartridges for the Gilson Aspec™

with "ready to use" pre assembled caps



CHROMABOND® columns (1,3,6 ml)
with ASP caps ▲ ■

Cartridges for TELEDYNE ISCO (i.e. Companion®)

All CHROMABOND® Flash RS types and 3 dimensions of the CHROMABOND® Flash Safety System (C-90, C-180, C-240) with holder, can be directly used in the Teledyne ISCO Companion®



CHROMABOND® Flash RS columns ■



CHROMABOND® Flash C-90, C-120, C-240
cartridges with the corresponding FLASH holders

▲ different sorbent weights are available on request

■ different phases are available on request, see previous page (for different phases/packings the sorbent weights may differ)

CHROMABOND® FLASH Safety System

Description	Dimensions	Weight [g]	Cat. No.	Pack of
Holders and replacement parts				
CHROMABOND® Flash casing 240	46 x 212 mm		730 808	1
CHROMABOND® Flash casing 360	46 x 298 mm		730 809	1
CHROMABOND® Flash cap (40 mm ID) with luer lock, female and sealing ring	60 x 47 mm		730 818	1
CHROMABOND® Flash replacement sealing ring (40 mm ID), for the cap			730 819	1
CHROMABOND® Flash replacement luer lock, female, for the cap			730 820	1
CHROMABOND® Flash starter kit				
CHROMABOND® Flash starter kit, content: 1/8" PTFE-tube, ID: 1.5 mm, length: 3 m; 5 x 1/4"-28, PP nuts; 5 x 1/8" ferrules, Tefzel; 5 x 1/4"-28 unions; 2 x 1/4"-28 luer lock female, PP; 1 x 1/4"-28 luer lock male, PP; 1 x 1/4"-28 luer tip male, PP			730 798	1
Cartridges with luer lock for other systems ("stand-alone" system)				
CHROMABOND® Flash MN-90 SiOH	114 mm	40	730 810	10
CHROMABOND® Flash MN-180 SiOH	194 mm	90	730 811	10
CHROMABOND® Flash MN-240 SiOH	240 mm	130	730 784	10
CHROMABOND® Flash MN-360 SiOH	325 mm	180	730 813	5
CHROMABOND® Flash MN-750 SiOH	270 mm	330	730 835	5
CHROMABOND® Flash MN-1000 SiOH	365 mm	450	730 838	2
CHROMABOND® Flash MN-90 C18ec	114 mm	55	730 814	2
CHROMABOND® Flash MN-180 C18ec	194 mm	110	730 815	2
CHROMABOND® Flash MN-240 C18ec	240 mm	150	730 816	2
CHROMABOND® Flash MN-360 C18ec	325 mm	220	730 817	1
CHROMABOND® Flash MN-750 C18ec	270 mm	440	730 836	1
CHROMABOND® Flash MN-1000 C18ec	365 mm	620	730 837	1
Accessories				
VALCO Cheminert injection valve, 6 ways, 2 positions, manual, 1/4"-28			724C226186	1
CHROMABOND® Flash luer lock, female, PP, 1/4"-28			730 805	5
CHROMABOND® Flash luer lock, male, PP, 1/4"-28			730 801	5
CHROMABOND® Flash 3 way adaptor with valve, 1/4"-28 connections			730 895	1
CHROMABOND® Flash solid injection adaptor 3 ml	3 ml		730 821	1
CHROMABOND® Flash solid injection adaptor 6 ml	6 ml		730 822	1
CHROMABOND® Flash solid injection adaptor 10 ml	10 ml		730 823	1
CHROMABOND® Flash solid injection adaptor 30/55 ml*	30 ml		730 831	1
CHROMABOND® Flash solid injection cartridge with luer lock, 3 ml, incl. filter elements	3 ml		730 824	10
CHROMABOND® Flash solid injection cartridge with luer lock, 6 ml, incl. filter elements	6 ml		730 825	10
CHROMABOND® Flash solid injection cartridge with luer lock, 10 ml, incl. filter elements	10 ml		730 826	10
CHROMABOND® Flash solid injection cartridge with luer lock, 30 ml, incl. filter elements	30 ml		730 833	10
CHROMABOND® Flash solid injection cartridge with luer lock, 55 ml, incl. filter elements*	55 ml		730 927	10
CHROMABOND® Flash solid injection filter elements for 3 ml cartridges	10 mm		730 827	20
CHROMABOND® Flash solid injection filter elements for 6 ml cartridges	13 mm		730 828	20
CHROMABOND® Flash solid injection filter elements for 10 ml cartridges*	16.5 mm		730 829	20
CHROMABOND® Flash sealing ring Viton® for 10 ml solid injection adaptor			730 925	5

* other sizes on request

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