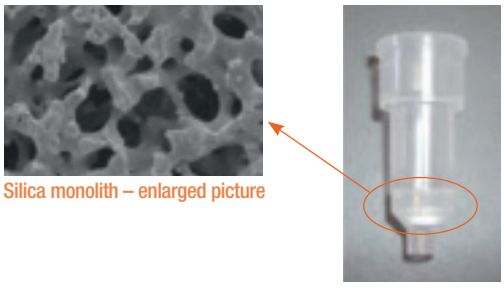
MONOSPIN® SERIES – MONOLITHIC SPE

The low pressure, high flow properties of GL Sciences' monolith silica technology make it uniquely suited for handling small sample volumes. MonoSpin® SPE centrifugal spin columns have been developed to improve concentration and yields in low volume sample preparation.

Features of MonoSpin

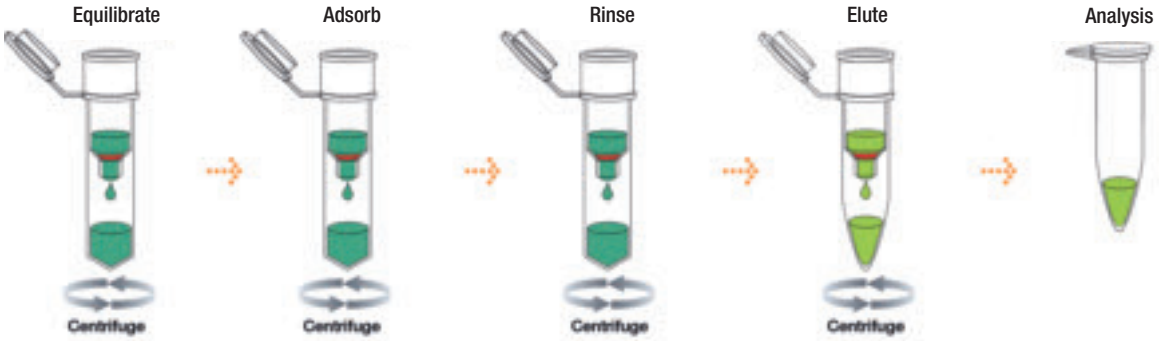
- **Easy to operate –** centrifuge elution allows loss-free and efficient processing of many samples simultaneously
- **Fast –** excellent mass transfer and rapid sample binding
- **Ideal for small sample volumes –** excellent for the pretreatment of samples of 50 - 800µl
- **Wide variety of functional groups –** eight surface chemistries available enabling most compound types to be purified



Silica monolith – enlarged picture

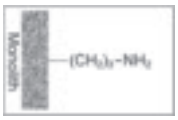
Monospin

Operation of MonoSpin

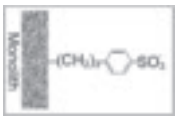


Product Range

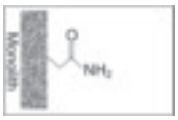
MonoSpin C18
Octadecyl functional group.
Optimal for drug extraction in biological samples, and desalting and enrichment of peptides.



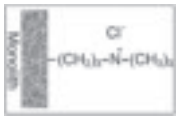
MonoSpin NH_2
Bonded with aminopropyl.
Optimal for the enrichment of sugar chains and/or hydrophilic compounds in HILIC mode.



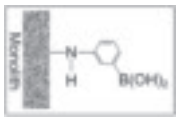
MonoSpin SCX
Bonded with propylbenzenesulphonic acid, combining strong cation-exchange and hydrophobic interaction.
Optimal for the extraction of basic drugs.



MonoSpin Amide
Bonded with amide groups.
Optimal for the extraction of sugar chains and various acidic and basic hydrophilic compounds in HILIC mode.

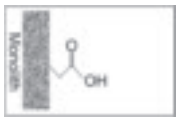


MonoSpin SAX
Bonded with trimethylaminopropyl, combining both strong anion-exchange and weak hydrophobic interaction.
Optimal for the extraction of acidic drugs.



MonoSpin PBA
Specific column combined with phenylboronic acid.
Excellent for the selective extraction of cis/diol compounds, such as catecholamines.

MonoSpin TiO
Monolith skeleton coated with titanium dioxide.
Excellent for the enrichment of phosphopeptides.



MonoSpin CBA
Bonded with carboxylic acid.
Optimal for the extraction of basic drugs.

Examples of Applications

- Drugs in urine (MonoSpin C18)
- Phosphoamino herbicides (e.g. glyphosate) in urine (MonoSpin TiO)
- Basic drugs in serum (MonoSpin SCX)
- Catecholamines in urine (MonoSpin PBA)

Ordering Information

MonoSpin Phase	Pack Size	
	50	100
C18	5010-21700	5010-21701
NH2	5010-21710	5010-21711
SAX	5010-21720	5010-21721
SCX	5010-21725	5010-21726

MonoSpin Phase	Pack Size	
	50	100
TiO	5010-21705	5010-21706
PBA	5010-21715	5010-21716
Amide	5010-21727	5010-21728
CBA	5010-21729	5010-21730

INERTSEP® MINI AERO SERIES

- Cartridges for sampling of aldehydes and ketones
- InertSep mini AERO DNPH-HR for additional sampling of acrolein
- High sampling efficiency
- Individually wrapped

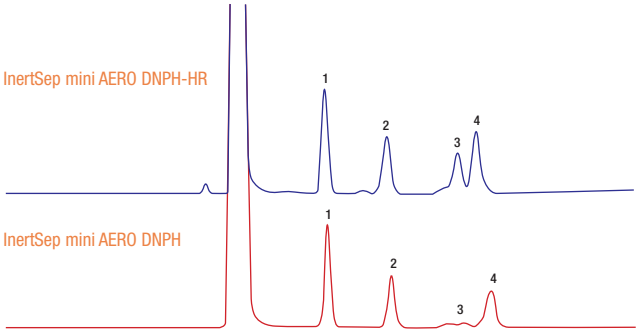
Volatile aldehydes and ketones from car exhausts and materials used in car interiors have to be strictly monitored in order to conform to automobile industry regulations. This is typically accomplished by sampling the atmosphere and derivatizing the trapped aldehydes and ketones with 2,4-dinitrophenylhydrazine. The resulting DNPH derivatives are analysed by HPLC or GC.

The InertSep® mini AERO DNPH and DNPH-HR cartridges from GL Sciences have been developed for the trapping and derivatization of airborne aldehydes and ketones. These cartridges contain 120µm spherical silica particles coated with 2,4-dinitrophenylhydrazine, which enables higher sampling efficiency than irregular particle type silicas. In addition, the background interference is particularly low, due to rigorous QC testing.

Specifications of InertSep mini AERO DNPH-HR

Adsorbent	Spherical silica (120µm) coated with DNPH
Adsorbent mass	300mg/cartridge
DNPH content	1mg/cartridge
Flow rate range	0 ~ 1,000ml/min
Temperature range	20°C ~ 100°C
Storage temperature (unopened)	<4°C
Formaldehyde in blank	<0.1µg/cartridge
Acetaldehyde in blank	<0.1µg/cartridge
Acetone in blank	<0.5µg/cartridge

For analysis by HPLC, the derivatives immobilised on the cartridge are eluted with acetonitrile. The InertSep mini AERO DNPH cartridge is recommended for the analysis of aldehydes and ketones alone, whereas the DNPH-HR cartridges are recommended when acrolein also needs to be analysed. Figure 1 shows the increased sensitivity in acrolein levels achieved using the DNPH-HR cartridges.



Sample collecting conditions
Sample: Indoor air
Temperature: Ambient
Collected indoor air volume: 5l
Flow rate: 5ml/min (10mins)

Analytical conditions
Column: Inertsil ODS-3
(5µm, 250 x 4.6mm)
Eluent: $CH_3CN - H_2O$ (70:30)

1. DNPH-Formaldehyde
2. DNPH-Acetaldehyde
3. DNPH-Acrolein
4. DNPH-Acetone

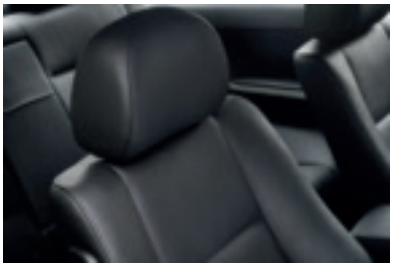


Figure 1. Collection of acrolein in indoor air

InertSep mini AERO Ozone Scrubber

It is known that ozone can contribute to decomposition of DNPH derivatives and therefore influences analysis results. This can be prevented by installing an ozone scrubber cartridge, packed with potassium iodide, in front of the DNPH cartridge.

InertSep mini AERO SC

Unreacted DNPH can interfere with the analysis when using GC. This can be prevented by installing an InertSep mini AERO SC cartridge, packed with strong cation-exchange resin, after the DNPH cartridge.

Ordering Information

Description	Adsorbent Mass (mg)	Quantity/pack	Catalogue No.	Price
InertSep mini AERO DNPH-HR	300	20	5010-23501	
InertSep mini AERO DNPH	300	20	5010-23500	
InertSep mini AERO Ozone Scrubber	1,500	20	5010-23510	
InertSep mini AERO SC	250	20	5010-23520	

Please see page 316 for details of sampling bags, suitable for use in conjunction with DNPH cartridges for sampling aldehydes and ketones.