

Product Datasheet

Vivaspin® Turbo 4

Enabling the Fastest
Sample Concentration
with Highest Recoveries



Benefits

- Complete Recoveries
- Fastest Concentrations
- Highest Chemical Resistance
- Unique PES and RC Device Range
- Optimal Sample to Membrane Compatibility

Product Information

Vivaspin® Turbo 4 centrifugal concentrator offers the optimal solution to any concentration or buffer exchange application with their broad range of MWCOs and unique membrane choice.

Highest flow rates are achieved due to their twin vertical membranes which minimize protein polarization and subsequent fouling of the membrane. Additionally, their sleek internal profile ensures maximum process speeds right down to the last 100 µL.

Working Principle

Centrifugation provides the vector to clear solvent and microsolute through an ultrafiltration membrane, enabling separation of macromolecular species from solvents primarily on the basis of size. It is particularly appropriate for the concentration of macromolecules and can also be used to purify molecular species or for solvent exchange. Ultrafiltration is a gentle, non-denaturing method that is more efficient and flexible than alternative processes.

High Performance

In a single spin, 4 mL solutions can be concentrated up to 150×. Samples can be typically concentrated in 10–30 minutes with macromolecular recoveries in excess of 90%.

Optimized Design for Fastest Concentration Results

The Vivaspin® Turbo optimized design with sleek internal profile ensures maximum process speeds all the way down to the last few microlitres. UV and ultrasonic joining technologies provide a smooth transition between membrane and plastic housing, allowing all of your valuable sample to be collected from the unique, pipette friendly angular dead-stop pocket.

Applications

Sample preparation

- Sample (protein, lipid, exosomes, virus, nanoparticle, macromolecule) concentration
- Desalting | dialysis
- Buffer exchange

Your sample is often the result of several months of research. It is valuable, and the Vivaspin® Turbo range provides the highest recoveries.

Summary

For scientists and lab technicians who need to quickly and safely concentrate a wide range of biological samples of 2 mL to 4 mL initial volume up to 150-fold, Sartorius offers the Vivaspin® Turbo 4 ultrafilters.

Unlike alternative ultrafiltration units, Vivaspin® Turbo is equipped with an angular dead-stop pocket, that enables reproducible and complete recoveries, while being the fastest in the market.

The ultimate in centrifugal ultrafiltration technology

- Sleek internal design: Ensures maximum process speed for complete ultrafiltration
- Large twin vertical membranes: Avoids fouling of the membrane thanks to minimized protein polarization.
- Unique angular dead stop pocket: Eliminates the risk of the sample concentrating to dryness, whilst being easily accessible to standard 200 µL pipette tips for convenient and complete recovery of the concentrate.

Optimized Choice of Materials for High Chemical Compatibility

The combination of polyethersulfone (PES) | regenerated cellulose (RC), polystyrene and polypropylene (PP) allows sterilization and depyrogenization of the Vivaspin® Turbo units.

Technical specifications

Vivaspin® Turbo 4 PES		
Materials	Body	Styrene butadiene copolymer
	Filtrate vessel	Polypropylene
	Concentrator cap	Polypropylene
	Membrane	Polyethersulfone
Dimensions	Total length, concentrator insert	75.5 mm
	Total length, assembled	122.5 mm
	Diameter, concentrator insert	14.6 mm
	Active membrane area	3.2 cm2
	Hold up volume, membrane	<10 µL
	Dead-stop volume, swing out	40 µL
	Dead-stop volume, fixed angle	30 µL
Concentrator capacity	Swing bucket rotor	4 mL
	Fixed angle rotor (25°)	4 mL
Maximum speed 3 kDa – 50 kDa	Swing bucket rotor	4,000 g
	Fixed Angle rotor (25°)	7,500 g
Maximum speed 100 kDa	Swing bucket rotor	3,000 g
	Fixed Angle rotor (25°)	5,000 g
Sterilization	EtO or 70% EtOH	
Removal of endotoxins [Depyrogenization]	1N NaOH*	

* PES variants only

Performance Characteristics

Vivaspin® Turbo 4 PES

Time to concentrate up to 30× at 20°C and solute recovery				
Rotor	Swing bucket		Fixed angle (25°)	
Centrifugal force	4,000 g		7,500 g	
Start volume	4 mL		4 mL	
	Time	Recovery	Time	Recovery
Cytochrome c* (12.4 kDa)				
3 kDa MWCO PES	60 min.	98%	80 min.	96%
5 kDa MWCO PES	40 min.	95%	50 min.	94%
Lysozyme* (14.3 kDa)				
3 kDa MWCO PES	65 min.	95%	70 min.	93%
5 kDa MWCO PES	50 min.	94%	60 min.	92%
α-Chymotrypsin** (25 kDa)				
10 kDa MWCO PES	10 min.	95%	8 min.	95%
BSA** (66 kDa)				
10 kDa MWCO PES	10 min.	98%	7 min.	97%
30 kDa MWCO PES	8 min.	96%	6 min.	97%
IgG** (160 kDa)				
30 kDa MWCO PES	18 min.	94%	13 min.	92%
50 kDa MWCO PES	16 min.	93%	12 min.	90%
100 kDa MWCO PES****	17 min.	94%	13 min.	92%

Ordering Information

Vivaspin® Turbo 4 centrifugal concentrator, disposable ultrafiltration units, for processing sample volumes of 2–4 mL, Polyethersulfone UF membrane.

Vivaspin® Turbo 4 PES

Cut off	Quantity	Order no.
3 kDa MWCO	25	ES50106-0003-25
3 kDa MWCO	100	ES50106-0003-100
5 kDa MWCO	25	ES50106-0005-25
5 kDa MWCO	100	ES50106-0005-100
10 kDa MWCO	25	ES50106-0010-25
10 kDa MWCO	100	ES50106-0010-100
30 kDa MWCO	25	ES50106-0030-25
30 kDa MWCO	100	ES50106-0030-100
50 kDa MWCO	25	ES50106-0050-25
50 kDa MWCO	100	ES50106-0050-100
100 kDa MWCO	25	ES50106-0100-25
100 kDa MWCO	100	ES50106-0100-100

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