








Waters Certified Vials

Choosing the right sample vial can be critical to your team's operational success.

The right sample vial for small and large molecule HPLC or UHPLC applications for UV and MS can help meet the business demand for your laboratory and the requirement of delivering the best quality results for your analysis.

Table 1. Vials for Routine and Advanced Analyses.

Vial Type	Routine Analysis	Advanced Analysis		Vial Shapes
	LCGC Certified	TruView™ pH Control LCMS Certified	QuanRecovery™ with MaxPeak™ HPS	
Applications	High-throughput QC analysis in the regulated environment, for compounds in µg/mL concentrations.	MS and routine QC analysis and quantification for sample concentrations below 1 ng/mL. Ideal for pH sensitive assays. Reduced adsorption of polar analytes.	Qualification and quantification of low abundant species with complex structures (i.e. peptides and hydrophobic compounds).	 Flat Bottom (2 mL)
Benefits	No UV-interferences from glass manufacturing, packaging residues, or septa material.	For pH-sensitive compounds and unbuffered diluents; reduced adsorption of polar bases with high vial-to-vial consistency.	High recovery and reproducibility after short- or long-term storage of low abundance species with complex structures.	 Max Recovery (1.5 mL) for smaller sample volumes
Features	Vials are assembled and tested for contaminants with a gradient UPLC-UV separation at 195 nm detection. In-process dimensional checks.	Coating-free, enhanced glass surface to reduce leaching of Na and other metal ions into solution with a high vial-to-vial consistency (<3 ppm) and reduced adsorption effects.	Coating-free, modified polypropylene surface to reduce active sites, non-specific binding, and hydrophobic interaction.	 Total Recovery (1.3 mL) for sample limited applications
Certification Tests	<ul style="list-style-type: none"> UPLC-UV certified assembly Dimensionally tested 	<ul style="list-style-type: none"> pH certified Low adsorption certified MS certified cap and septa UPLC-UV certified assembly 	<ul style="list-style-type: none"> Protein recovery QC tested Dimensionally tested 	 Conical (polypropylene) for smaller sample volumes
Shapes				
Surfaces	USP Type 1, 33 Glass (clear) USP Type 1, 51 Glass (amber)	USP Type 1, 33 Glass, Low Na (clear) USP Type 1, 51 Glass, Low Na (amber)	MaxPeak HPS (High Performance Surfaces) Polypropylene	

LCGC CERTIFIED VIALS

High-throughput laboratories rely on consistent chemical and mechanical product performance of sample vials. The LC cleanliness test for Certified Vials ensures a low level of contamination for use across a wide range of UV wavelengths.

The complete certification process for LCGC certified vials covers:

- UPLC cleanliness test of the assembled vials
- Dimensional test of glass, executed during glass manufacturing

UPLC CLEANLINESS TEST

The sample vials, septa and caps, as part of a finished Certified Vial kit, are tested and assembled to reflect the intended use. Waters uses reference compounds across a wide range of polarities ensuring chromatographic integrity during the gradient RPLC test, measuring at a low wavelength of 195 nm to enhance detection sensitivity. Contaminants or extra tables of the highest level are quantified not to exceed 100 ppb.

WATERS TruView pH CONTROL LCMS CERTIFIED VIALS

The analysis of low abundance species, pH-sensitive analytes, or not yet well understood compound mixtures benefit from consistent and well controlled vial surfaces. The glass surface of TruView™ pH Control LCMS Certified Vials minimizes pH shifts away from the neutral and thus eliminates unwanted reactions and ghost peaks. The surface of the glass vials also shows low adsorption characteristics. This is relevant in laboratories requiring a high level of vial-to-vial reproducibility for high value samples.

The TruView pH Control LCMS Certification covers:

- pH test of glass vials
- Adsorption test of glass vials for polar bases
- UPLC cleanliness test of the assembled vials
- LC-MS cleanliness test of the assembled vials
- Septa cleanliness test by GC, executed during septa manufacturing
- Dimensional test of glass vials, executed during glass manufacturing

pH TEST

A pH test is used in manufacturing to monitor acid or base concentration in solution. Waters uses an electrolyte testing solution with the elimination of atmospheric carbon dioxide influence for reliable pH measurements. The pH of the testing solution in the glass vial is monitored to be close to neutral.

ADSORPTION TEST

The reduction in concentration of a solution of 1 ng/mL (1 ppb) nortriptyline after a defined period is tested with UPLC-MS. For further testing details, please reference literature p/n: 720004097EN.

These vials are recommended for use with Waters MaxPeak™ Premier Columns and Systems.

QuanRecovery VIALS WITH MaxPeak HIGH PERFORMANCE SURFACES (HPS)

QuanRecovery™ Vials (and Plates) are designed where accurate qualification and quantification of low abundance species with complex molecular structures is critical. Complex structures and charges within one molecule can lead to non-specific binding or adsorption (NSB or NSA) as there are several mechanisms available for analytes to latch onto any surface and are non-detectable or quantified incorrectly.

The HPS effect was achieved by applying a coating-free surface modification of the virgin polypropylene material from which these vials are made. To ensure suitability for MS analysis, they are available with the same quality cap used for TruView pH Control LCMS Certified Vials.

The functionality of QuanRecovery Vials is certified by measuring protein adsorption as part of the manufacturing process.

These vials are recommended for use with MaxPeak Premier Columns and Systems.

Product	Description
LCGC Certified Clear	USP Type 1, 33 Expansion Glass
LCGC Certified Amber	USP Type 1, 51 Expansion Glass
TruView pH-Control LCMS Certified Clear	USP Type 1, 33 Expansion Glass, Low-Na Surface
TruView pH-Control LCMS Certified Amber	USP Type 1, 51 Expansion Glass, Low-Na Surface
QuanRecovery	Virgin Polypropylene with MaxPeak HPS

ORDERING INFORMATION

Product	Description	Material	Format	Septa	P/N
LCGC Certified 12 x 32 mm (Clear Glass)	Screw Neck Vial with Cap and preslit PTFE/Silicone Septum, 2 mL, 100/pk	Clear Glass	Standard, 2 mL	PTFE/Silicone - preslit	186000307C
	Screw Neck Vial with Cap and PTFE/Silicone Septum, 2 mL, 100/pk	Clear Glass	Standard, 2 mL	PTFE/Silicone	186000272C
	Screw Neck Vial with Cap and PTFE Septum, 2 mL, 100/pk	Clear Glass	Standard, 2 mL	PTFE	186007193C
	Screw Neck Vial with Polyethylene Septumless Cap, 2 mL, 100/pk	Clear Glass	Standard, 2 mL	Polyethylene, Septumless	186004132C
	Screw Neck Vial Max Recovery with Cap and preslit PTFE/Silicone Septum, 1.5 mL, 100/pk	Clear Glass	Max Recovery, 1.5 mL	PTFE/Silicone - preslit	186000327C
	Screw Neck Vial Max Recovery with Cap and PTFE/Silicone Septum, 1.5 mL, 100/pk	Clear Glass	Max Recovery, 1.5 mL	PTFE/Silicone	186000326C
	Screw Neck Vial Max Recovery with Cap and PTFE Septum, 1.5 mL, 100/pk	Clear Glass	Max Recovery, 1.5 mL	PTFE	186007195C
	Screw Neck Vial Max Recovery with Polyethylene Septumless Cap, 1.5 mL, 100/pk	Clear Glass	Max Recovery, 1.5 mL	Polyethylene, Septumless	186004168C
	Screw Neck Vial Total Recovery with Cap and preslit PTFE/Silicone Septum, 1 mL, 100/pk	Clear Glass	Total Recovery, 1 mL	PTFE/Silicone - preslit	186000385C
	Screw Neck Vial Total Recovery with Cap and PTFE/Silicone Septum, 1 mL, 100/pk	Clear Glass	Total Recovery, 1 mL	PTFE/Silicone	186000384C
	Screw Neck Vial Total Recovery with Cap and PTFE Septum, 1 mL, 100/pk	Clear Glass	Total Recovery, 1 mL	PTFE	186007197C
	Screw Neck Vial Total Recovery with Polyethylene Septumless Cap, 1 mL, 100/pk	Clear Glass	Total Recovery, 1 mL	Polyethylene, Septumless	186004167C
	Screw Neck Vial Qsert with Cap and preslit PTFE/Silicone Septum, 300 µL, 100/pk	Clear Glass	Qsert, 300 µL	PTFE/Silicone - preslit	186001128C
	Screw Neck Vial Qsert with Cap and PTFE/Silicone Septum, 300 µL, 100/pk	Clear Glass	Qsert, 300 µL	PTFE/Silicone	186001126C
LCGC Certified 12 x 32 mm (Amber Glass)	Screw Neck Vial with Cap and preslit PTFE/Silicone Septum, 2 mL, 100/pk	Amber Glass	Standard, 2 mL	PTFE/Silicone - preslit	186000847C
	Screw Neck Vial with Cap and PTFE/Silicone Septum, 2 mL, 100/pk	Amber Glass	Standard, 2 mL	PTFE/Silicone	186000846C
	Screw Neck Vial with Cap and PTFE Septum, 2 mL, 100/pk	Amber Glass	Standard, 2 mL	PTFE	186007194c
	Screw Neck Vial with Polyethylene Septumless Cap, 2 mL, 100/pk	Amber Glass	Standard, 2 mL	Polyethylene, Septumless	186004133C
	Screw Neck Vial Max Recovery with Cap and preslit PTFE/Silicone Septum, 1.5 mL, 100/pk	Amber Glass	Max Recovery, 1.5 mL	PTFE/Silicone - preslit	186003886C
	Screw Neck Vial Max Recovery with Cap and PTFE/Silicone Septum, 1.5 mL, 100/pk	Amber Glass	Max Recovery, 1.5 mL	PTFE/Silicone	186003885C
	Screw Neck Vial Max Recovery with Cap and PTFE Septum, 1.5 mL, 100/pk	Amber Glass	Max Recovery, 1.5 mL	PTFE	186007196C
	Screw Neck Vial Qsert, with Cap and preslit PTFE/Silicone Septum, 300 µL, 100/pk	Amber Glass	Qsert, 300 µL	PTFE/Silicone - preslit	186001131C
	Screw Neck Vial Qsert, with Cap and PTFE/Silicone Septum, 300 µL, 100/pk	Amber Glass	Qsert, 300 µL	PTFE/Silicone	186001130C
TruView pH Control LCMS Certified 12 x 32 mm (Clear Glass)	Screw Neck Vial with Cap and preslit PTFE/Silicone Septum, 2 mL, 100/pk	Clear Glass, low-Na	Standard, 2 mL	PTFE/Silicone - preslit	186005666CV
	Screw Neck Vial with Cap and PTFE/Silicone Septum, 2 mL, 100/pk	Clear Glass, low-Na	Standard, 2 mL	PTFE/Silicone	186005660CV
	Screw Neck Vial Max Recovery with Cap and preslit PTFE/Silicone Septum, 1.5 mL, 100/pk	Clear Glass, low-Na	Max Recovery, 1.5 mL	PTFE/Silicone - preslit	186005662CV
	Screw Neck Vial Max Recovery with Cap and PTFE/Silicone Septum, 1.5 mL, 100/pk	Clear Glass, low-Na	Max Recovery, 1.5 mL	PTFE/Silicone	186005668CV
	Screw Neck Vial Total Recovery with Cap and preslit PTFE/Silicone Septum, 1.5 mL, 100/pk	Clear Glass, low-Na	Total Recovery, 1 mL	PTFE/Silicone - preslit	186005663CV
	Screw Neck Vial Total Recovery with Cap and PTFE/Silicone Septum, 1 mL, 100/pk	Clear Glass, low-Na	Total Recovery, 1mL	PTFE/Silicone	186005669CV
TruView pH Control LCMS Certified 12 x 32 mm (Amber Glass)	Screw Neck Vial with Cap and preslit PTFE/Silicone Septum, 2 mL, 100/pk	Amber Glass, low-Na	Standard, 2 mL	PTFE/Silicone - preslit	186005661CV
	Screw Neck Vial with Cap and PTFE/Silicone Septum, 2 mL, 100/pk	Amber Glass, low-Na	Standard, 2 mL	PTFE/Silicone	186005667CV
	Screw Neck Vial Max Recovery with Cap and preslit PTFE/Silicone Septum, 1.5 mL, 100/pk	Amber Glass, low-Na	Max Recovery, 1.5 mL	PTFE/Silicone - preslit	186005670CV
	Screw Neck Vial Max Recovery with Cap and PTFE/Silicone Septum, 1.5 mL, 100/pk	Amber Glass, low-Na	Max Recovery, 1.5 mL	PTFE/Silicone	186005664CV
QuanRecovery with MaxPeak HPS	Vial Package (186009186) with preslit PTFE Silicone Cap and Septum, 100/pk	Virgin PP, MaxPeak HPS	Conical, 300 µL	PTFE/Silicone - preslit	176004434
	12 x 32 mm Screw Neck Vial, 300 µL, 100/pk	Virgin PP, MaxPeak HPS	Conical, 300 µL	n/a	186009186

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