Sample Vials and Accessories

[For all ACQUITY UPLC, HPLC, and GC systems]

Waters

THE SCIENCE OF WHAT'S POSSIBLE.®

Waters Sample Vials and Accessories

Quality vials are essential for reliable analytical results. All Waters Certified Vials are tested by LC or LC/MS to assure quality and cleanliness. The test results confirm the vials, cap and septa have been properly manufactured, handled and packaged, and are free from any potential contaminants which could result in chromatographic ghost peaks.

- Compatible with all autosamplers
- Combination packs for easy ordering
- Complete selection of vial sizes and materials
- Specialty vials for limited sample volumes

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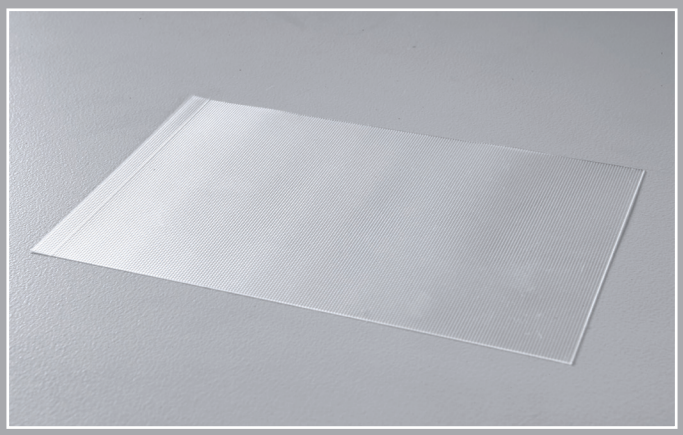
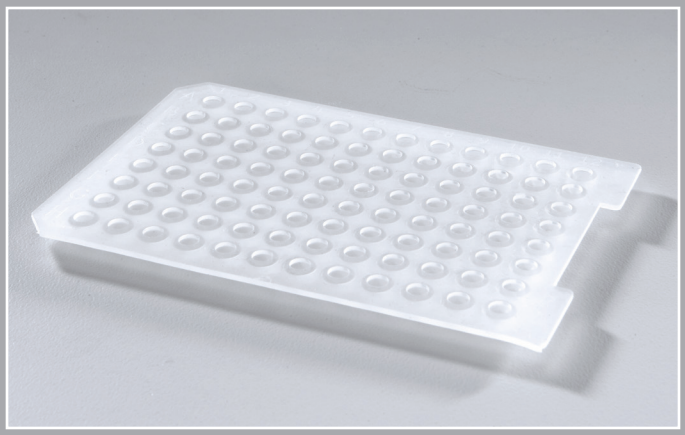
Featured

TruView LCMS Certified Vials include the stringent dimensional tolerances and UV and MS cleanliness tests required of the LC/GC and LCMS Certified Vials lines. The glass surface of TruView™ vials exhibits low polar analyte adsorption. TruView vials are manufactured under tightly controlled process conditions (patent pending) that limit the concentration of free ions on the surface of glass which often lead to analyte adsorption. Waters TruView LCMS Certified Vials are tested for high recovery of analytes at 1 ng/mL concentration, using UPLC®/MS/MS (MRM). TruView Vials exhibit the lowest surface adsorption of any LC autosampler vial on the market.

96-Well Plate, 700 µL per well is made from a clean grade of polypropylene. The wells are designed to maximize sample recovery for all ACQUITY UPLC® Systems. The plate has the same dimension (height and well depth) as the ANSI 1 mL plate for ease of programming use. Select "ANSI-96well1mL plate" from the plate select screen in the ACQUITY UPLC Sample Manager.



Adhesive Seal is a polyolefin film with a synthetic rubber adhesive. This seal is ideal for protein and peptide customers with samples in buffers. The adhesive is resistant to small concentrations (0-30%) of polar organic solvents and can be used between -80 °C to 80 °C. The seal requires no heat sealing equipment to apply.



Pre-slit PTFE/Silicone (P/N 186006332 and 186006335) is made from a clean grade of silicone. The PTFE/silicone mats can be used for plates and glass inserts. These mats are translucent in color.

Waters is a leading manufacturer of analytical instrumentation and consumable products. We understand the importance of autosampler vials for the performance of analytical instrumentation. There are many factors to consider in selecting the proper vial:

- Needle design
- Optic and robotic specifications
- Autosampler tray design
- Volatility
- Chemical compatibility
- Sample volume
- Cleanliness

At Waters, we take all of these factors into consideration in the design, manufacture and delivery of our vials and accessories. Unlike our competition, who offer Type I, 33-expansion glass in North America and Type I, 51-expansion glass in Europe or Japan, Waters single source manufacturing produces Type I, 33-expansion glass, the lowest free ion glass available, for worldwide distribution.

Waters Certified Vials

Waters offers three lines of certified vials: LC/GC Certified Vials, LCMS Certified Vials, and TruView LCMS Certified Vials. All lines are certified as being within dimensional tolerances and are tested for chemical cleanliness by instrumentation methods.

CERTIFIED

Waters LC/GC Certified Vials

The LC/GC Certified Vials are tested by HPLC using UV detection. The HPLC test was developed to look for trace levels of chemicals used in the manufacturing and packaging process. These chemicals include; lubricants, surfactants, antistatic and antioxidants from packaging. The tests are run on each batch of vials, after they have been packaged for several days, to ensure cleanliness. An additional headspace GC Test is done to look for proper curing of the silicone septa.

LCMS
CERTIFIED

Waters LCMS Certified Vials

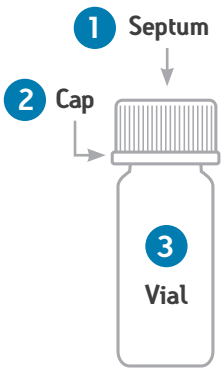
LCMS certified vials are tested using MS detection. In this test, we take an unbiased approach and look for any ionized masses regardless of the source. The test is run in scan mode with specifications set on total ion count and presence of clusters in the high mass range.

TruView™ LCMS
CERTIFIED

TruView LCMS Certified Vials

TruView LCMS Certified Vials include stringent dimensional tolerances plus UV and MS cleanliness testing. The additional product attribute of TruView vials is low polar analyte adsorption. The vials are manufactured by a process that limits the concentration of free ions on the surface of glass; ionic sites can cause analyte adsorption. Waters TruView LCMS Certified Vials are tested for high recovery of analyte at 1 ng/mL concentration using UPLC/MS/MS (MRM) and yield little adsorption. These vials exhibit the lowest adsorption of autosampler vials in the market.

Choosing the Right Vial



There are three decisions you need to make when choosing the correct vial for your application: **the septum, the closure and the vial itself.**

Read through the selection options to determine the proper combination for your application. For your convenience, Waters offers many of these choices as combination packs. The vial, cap, and septum come pre-packaged as packs of 100 for ease and convenience in ordering.

1 Septa Selection Guide

PTFE

- Recommended for single injection applications
- Excellent solvent resistance and chemical compatibility
- Does not reseal upon puncturing
- Not recommended for long-term sample storage

PTFE/Silicone

- Recommended for multiple injections and sample storage
- Demonstrates excellent resealing characteristics
- PTFE chemical resistance until punctured, then the septum will have the chemical compatibility of silicone
- Working temperature range from -40 °C to 200 °C

Pre-slit PTFE/Silicone

- Provides adequate venting to prevent vacuum formation in sample vial, delivering excellent sample-draw reproducibility
- Eliminates coring from bottom draw needles
- Good resealing capabilities
- Recommended for multiple injections
- Working temperature range from -40 °C to 200 °C

PE Septumless

- Same advantages as PTFE

2 Vial Closures Guide

Vials are available in three closure types: crimp, snap, and screw cap. Each closure has its advantages.

Cap	Seal	Comment
Crimp	Excellent seal	Requires tools
Snap	Moderate seal	Fast, no tools, some cap cracking
Screw	Excellent seal	Universal

Crimp caps squeeze the septum between the rim of the glass vial and the crimped aluminum cap. This forms an excellent seal preventing evaporation. The septum stays seated during piercing by the autosampler needle. The crimp cap vial requires crimping tools to carry out the sealing process. For few samples, manual crimper tools are the best choice. For large numbers of sample, automated crimpers are available.

Snap caps are an extension of the crimp cap system of sealing. A plastic cap is stretched over the rim of the vial to form a seal by squeezing the septum between the glass and the stretched plastic cap. The plastic cap creates tension when trying to return to its original size. This tension forms the seal between glass, cap and septum. Plastic snap caps do not require any tools to assemble.

Snap caps are not as effective a seal as other closures.

- If the fit of the cap is very tight, the cap is hard to apply and may be subject to crack.
- If the fit is too loose, the seal is poor and the septum may dislodge.

Screw caps are universal. Screwing the cap applies a mechanical force that squeezes the septum between the glass rim and the cap. Screw caps form an excellent seal and mechanically hold the septum in place during piercing. No tools are required for assembly.

LectraBond™ screw caps are available through Waters. This screw cap has a PTFE/silicone septum bonded to the polypropylene cap, using a non-solvent bonding process. This bonding technology is designed to keep the septum/cap together during shipment and assembly onto vials. The bond will aid in preventing dislodging of the septum during use, but the primary sealing mechanism is the mechanical force applied by tightening the cap to the vial.

Cap tightening is the mechanism that forms the seal and holds the septum in place during needle insertion. There is no need to over-tighten the cap, as it can compromise the seal and lead to dislodging. The septum starts to cup or indent when you begin to over-tighten.

3 Certified Vial Selection Guide

Choosing the level of certified vial should be based on the concentration of analyte. Concentration of analytes is often tied closely with the detection source used.

Analyte Concentration	Detection Source	Recommended Product
µg/mL	UV, RI (non-MS)	LC/GC Certified Vials
100's ng/mL	Single quadrupole and older MS/MS	LCMS Certified Vials
1 ng/mL and lower	MS/MS, Tof	TruView LCMS Certified Vials

Type 1, 33-Expansion Borosilicate Glass

The most chemically-inert glass available, generally used in analytical labs for high quality test results. It has an expansion coefficient of approximately 33 x 10^{-7} °C and is composed primarily of silicone and oxygen, with trace amounts of boron and sodium. All Waters clear glass vials are Type 1, 33-expansion glass.

Type 1, 51-Expansion Glass

More alkaline than 33-expansion glass and is adequate for many laboratory uses. It has an expansion coefficient of 51x10^{-7} °C and is composed primarily of silicon and oxygen, with trace amounts of boron. All Waters amber glassware is Type 1, 51-expansion glass.

Deactivated Glass (DV)

For analytes that are highly polar and may associate with the polar glass surface of glass, deactivated vials may be a good choice. The glass vials are treated with gas phase reactive organosilane to produce a hydrophobic glass surface. Deactivated vials can be stored dry indefinitely.

Polypropylene Plastic

Polypropylene (PP) is a non-reactive plastic and can be used where glass is not an appropriate option. Polypropylene vials can be incinerated while still sealed, minimizing exposure to potentially hazardous substances. The maximum temperature use is 135 °C.

Deactivated Glass Vials (DV) and Inserts

Eliminates adsorbtion of compounds onto the glass surface when working with biological or pharmaceutical compounds, natural products, pesticides and herbicides. The surface modification is permanent, resulting in an indefinite shelf life.

Waters Alliance Total Recovery Vial

Specifically designed for the side draw-port needle and the factory needle draw depth settings of the Waters Alliance 2690/2695 HPLC. This vial delivers maximum sample capacity (~1 mL) with minimum residual volume (~9 µL).

Waters Maximum Recovery Vial

Specifically designed for the bottom draw-port needle of the Waters ACQUITY UPLC and Alliance HT HPLC Systems. This vial delivers maximum sample capacity (~1.5 mL) with minimum residual volume. The 9 mm cap makes it ideal for use with Agilent HPLC and GC Systems.

Waters Online Vials Selector

The Waters Vials Selector is designed to simplify the process of selecting the best vial solutions for your system and application requirements.

For more information about choosing the correct vial for your application, please visit **www.waters.com/vialsselector**.

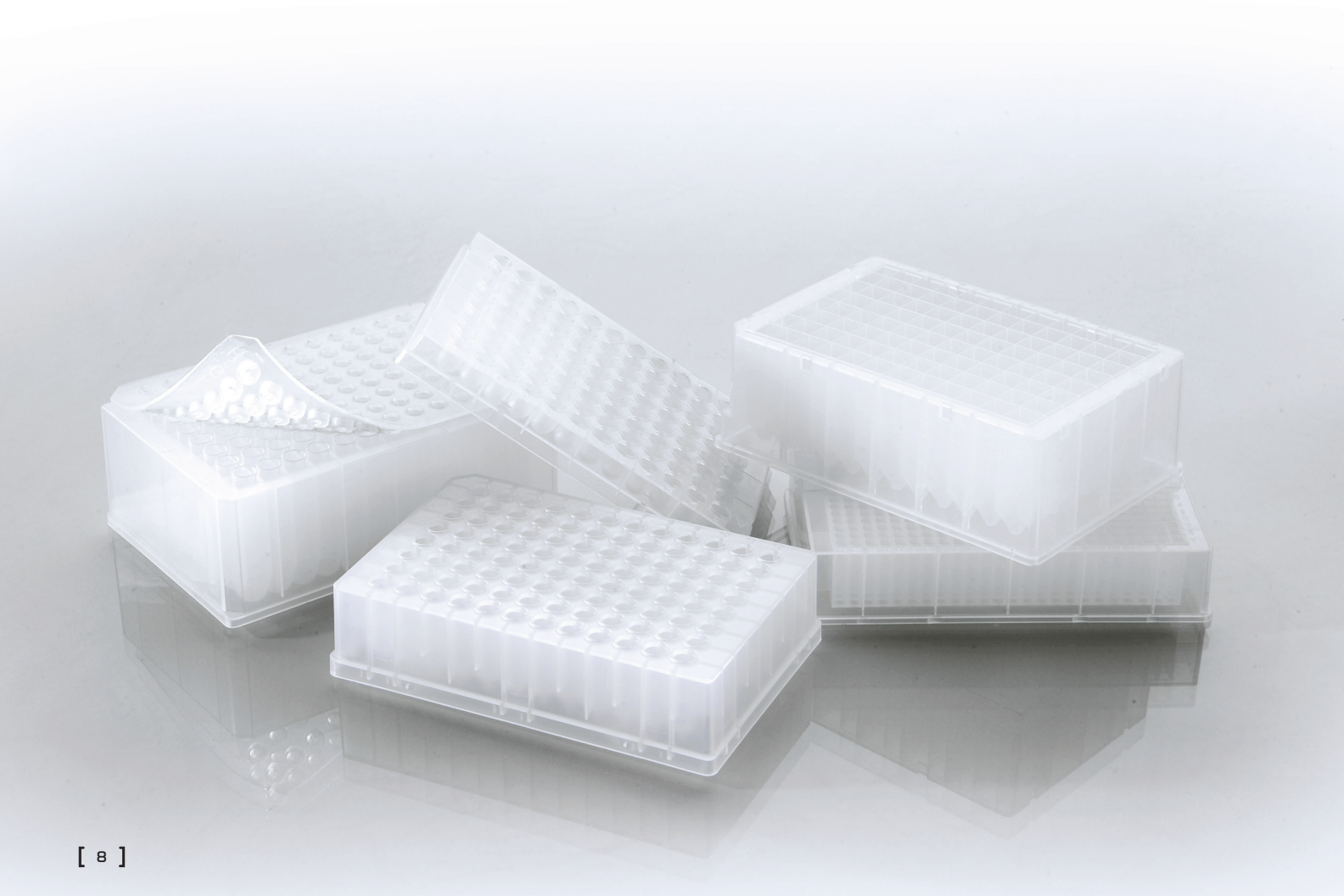
Sample Plates

Waters offers a selection of 96- and 384-well sample plates for use in autosamplers. The plates are SBS/ANSI compliant for robot compatible systems. The 96-well plates can also be used as collection plates for 96-well SPE and filtration plate formats.

All the plates Waters offers are made of polypropylene for chemical resistance. We also offer plates with glass inserts for customers looking for 96-well formats and prefer the sample be in contact with a glass surface. The glass inserts are also available in deactivate glass format. Refer back to the vials section for information on glass and deactivated glass.

The sample plates can be centrifuged to the following maximum centrifugal force. Care should be taken when centrifuging plates; the plate can deform. A deformed plate can cause the instrument to error and shut down.

Part Number	Description	Maximum Centrifugal Force
186002643	96-Well Plate, 350 µL per well	5000 g
186005837	96-Well Plate, 700 µL per well	2000 g
186002481	96-Well Plate, 800 µL per well	2000 g
186002482	96-Well Plate, 2 mL per well	5000 g
186002631	384-Well Plate, 100 µL per well	5000 g
186002632	384-Well Plate, 250 µL per well	5000 g



Seals

Waters offers a selection of cap mats, heat seals and an adhesive seal for plates.

Polypropylene Cap Mats

There are polypropylene cap mats to fit the selection of 96-well plates. These mats offer the chemical resistance of PP.

Silicone / PTFE Cap Mats

Silicone / PTFE cap mats are available for 96-well plates and 96-well plates with glass inserts. The mats come in slit and non-slit versions. The slit versions are recommended for use in autosamplers for proper venting and accuracy of sample draw with excellent resealing characteristics. The non-slit versions are recommended for long term sample storage.

Clear Polyester Heat Seal

The clear polyester seal is good for most sample solvents and buffers including DMSO. The seal can be used over the temperature range from -80 °C to 80 °C. Position the seal with the shiny side facing up. Apply heat using a heat sealer for 2 to 3 seconds in both directions.

Aluminum Foil Heat Seal

The aluminum foil heat seal is a polyester/aluminum laminate. The addition of the aluminum layer reduces the gas permeability of the seal. For longer storage term storage, the aluminum foil heat seal is a better choice to reduce evaporative loss. The seal can be used over the temperature range from -200 °C to 90 °C. Position the seal with the white side facing up. Apply heat using a heat sealer for 2 to 3 seconds in both directions.

Adhesive Seal

The adhesive seal is a polyolefin film with a synthetic rubber adhesive. This seal is ideal for protein and peptide customers with samples in buffers. The adhesive is resistant to small concentrations (0-30%) of polar organic solvents and can be used between -80 °C to 80 °C. The seal requires no heat sealing equipment to apply.

Waters Autosampler Vials, Plates, and Seals for Use with the ACQUITY UPLC Systems Family

The ACQUITY UPLC Systems family continues to evolve and expand, providing a number of solutions for improved resolution, sensitivity, and throughput. A number of different UPLC Sample Managers are available, each of which offer a choice of needle type to meet the requirements of your laboratory's workflow. The following is the approved selection of vials, plates, and plate seals for the current ACQUITY UPLC System configurations.

Compatibility Tables

The following tables recommend vials and plates for the ACQUITY UPLC System configurations:

Fixed Loop Needle

Vials: ACQUITY UPLC, ACQUITY UPLC M-Class, nanoACQUITY UPLC, ACQUITY UPC^2™ and ACQUITY UPLC I-Class FL; Sample Managers

Plates: ACQUITY UPLC, ACQUITY UPLC M-Class, nanoACQUITY UPLC and ACQUITY UPLC I-Class FL; Metal and Metal Tip Needles

ACQUITY UPLC, ACQUITY UPLC M-Class, nanoACQUITY UPLC, ACQUITY UPC^2 and ACQUITY UPLC I-Class FL; PEEK and PEEKsil Needles

Flow Through Needle

Vials: ACQUITY UPLC H-Class and ACQUITY UPLC I-Class FTN

Plates: ACQUITY UPLC H-Class and ACQUITY UPLC I-Class FTN

Residual Volumes

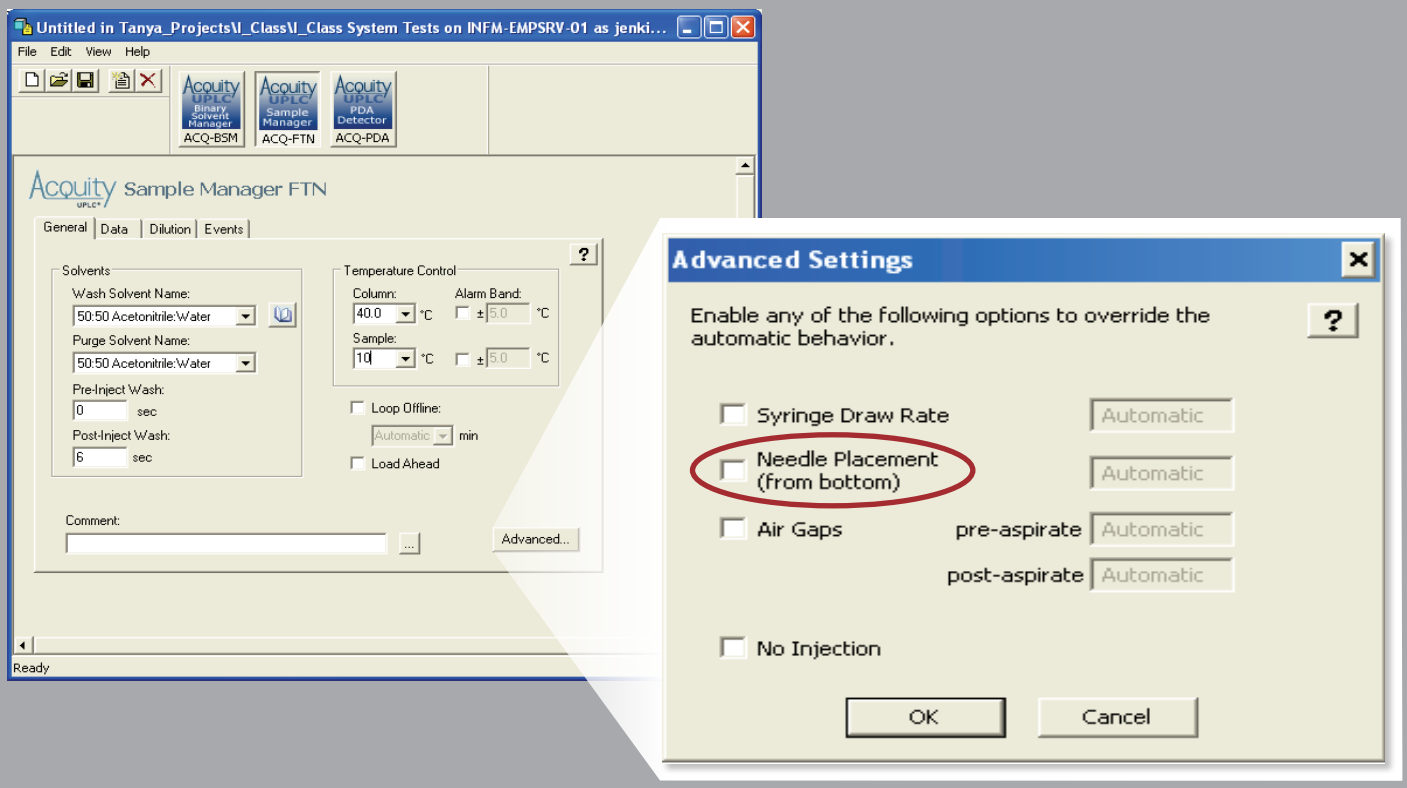
All residual volumes recorded in the following tables are calculated from the needle stopping at the default needle placement setting. For sample limited applications, go to the advanced setting screen in the Sample Manager Instrument Method Editor to change needle placement. For the flow through needles (FTN), care should be taken when lowering the needle placement setting. Needle tips can be damaged by striking against hard surfaces, causing sealing or carryover issues.

	Default Needle Placement	
Needle Type	**Plates**	**Vials**
FTN	2 mm	4 mm
FL	2 mm	2 mm

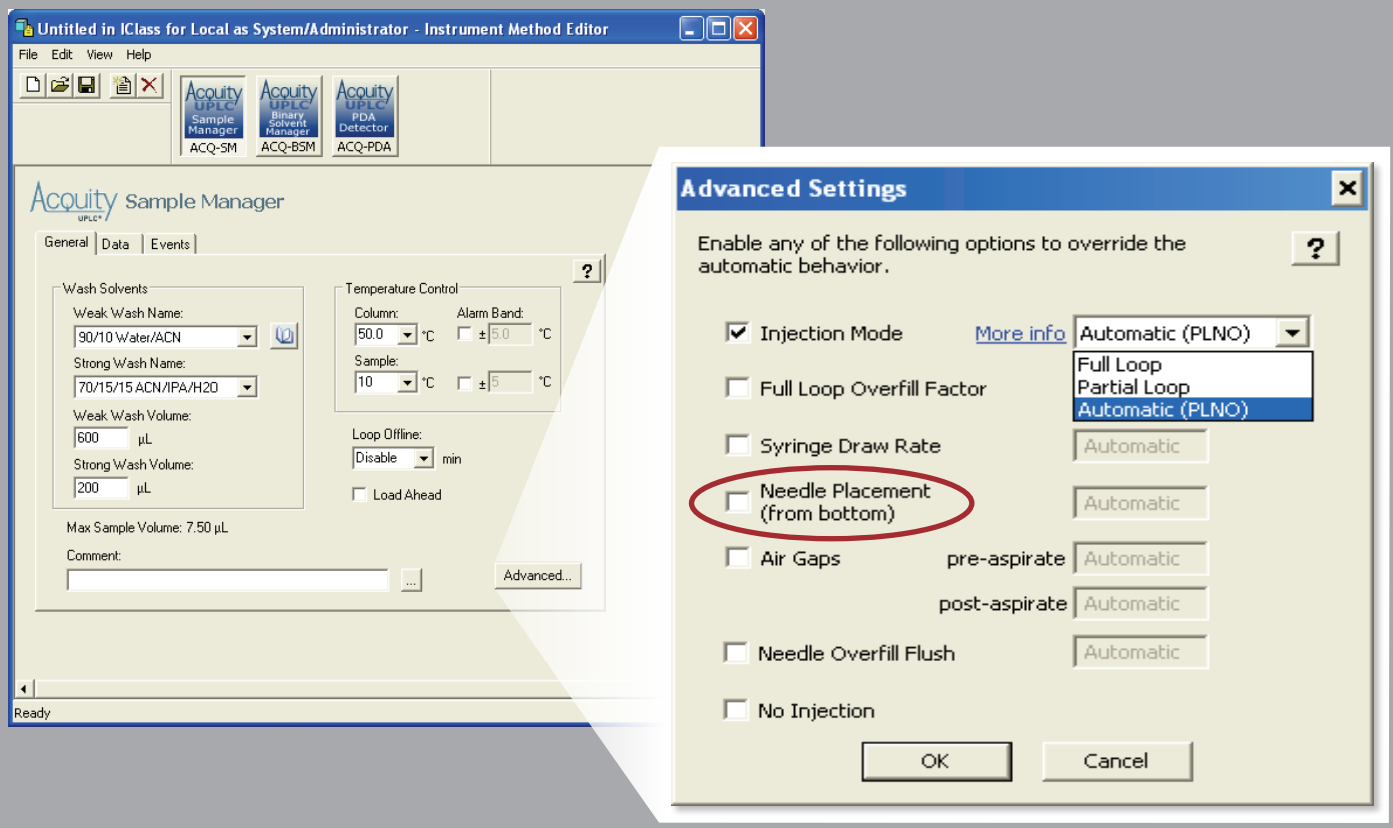
These are the default needle placement settings for ACQUITY UPLC needle types. The residual volumes recorded in the product tables were determined for these placements.

How to Change Needle Depth with the ACQUITY Sample Manager

Flow Through Needle (FTN)



Fixed Loop Needle (FL)



Vials for ACQUITY UPLC, ACQUITY UPLC I-Class, ACQUITY UPLC M-Class, nanoACQUITY UPLC, and ACQUITY UPC²

Fixed Loop (FL), All Needles

12 x 32 mm	Clear	Amber	Max Recovery	Amber Max	300 µL PP	750 µL PP	Clear Glass with Septumless Cap	Total Recovery
								
	1	2	3	4	5	6	7	8
TruView LCMS Certified Combination Packs								
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	186005666CV	186005661CV	186005662CV	186005670CV	—	—	—	186005663CV
LCMS Certified Combination Packs								
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	600000668CV	600000669CV	600000670CV	600000755CV	—	—	—	600000671CV
LC/GC Certified Combination Packs								
Bonded Pre-Slit Silicone/ PTFE Septum	186000307C	186000847C	186000327C	186003886C	—	—	—	186000385C
Combination with PE Septumless Cap	186004132C	186004133C	186004168C	—	—	—	186004132C	186004167C
Combination Packs								
Bonded Pre-Slit Silicone/ PTFE Septum Deactivated	186000307DV	186000847DV	186000327DV	—	—	—	—	186000385DV
Bonded Pre-Slit Silicone/ PTFE Septum	—	—	—	—	186002639	186005221	—	—
Combination with PE Septumless Cap	—	—	—	—	186004112	—	—	—
Injectable Volumes								
Max	1600 µL	1600 µL	1100 µL	1100 µL	210 µL	530 µL	1600 µL	950 µL
Residual	165 µL	165 µL	22 µL	22 µL	20 µL	70 µL	165 µL	4 µL
Vial Selection from Chromatography Data System	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder
Storage Cap								
Black Solid 9 mm Cap with Silicone/PTFE Liner for Sample Storage	186007187	186007187	186007187	186007187	186007187	186007187	186007187	186007187

When (DV) appears beside a number, a deactivated version of the part can be ordered by adding a DV to the right of the part number.

Plates for ACQUITY UPLC, ACQUITY UPLC I-Class, ACQUITY UPLC M-Class, and nanoACQUITY UPLC

Fixed Loop (FL), Metal and Metal Tip Needles

	96-Well Plates				384-Well Plates	
Well Shape						
Plates	186002643	186005837	186002481	186002482	186002632	186002631
Pack Size	100	25	50	50	50	50
Well Volume	350 µL	700 µL	800 µL	2 mL	250 µL	100 µL
Sealing Options						
PTFE/Silicone Pre-slit, 5/pk	186006332	186006332	186006332	186006335	—	—
Polypropylene Cap Mat, 50/pk	—	186002483	186002483	186002484	—	—
Clear Polyester Heat Seal, 100/pk	186002788	186002788	186002788	186002788	186002788	186002788
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	186002789	186002789	186002789	186002789	186002789
Adhesive Seal, 100/pk	186006336	186006336	186006336	186006336	186006336	186006336
Number of Plates in Sample Organizer	21	10	10	7	10	21
Shape	round	round	round	square	square	square
Bottom	round	conical	conical	conical	conical	conical
Material	PP	PP	PP	PP	PP	PP
Height of Plate	14 mm	31 mm	31 mm	42.5 mm	22 mm	15.5 mm
Well Depth	11.25 mm	27 mm	27 mm	39 mm	19.5 mm	12.3 mm
Residual Volume in ACQUITY at Default Needle Placement of 2 mm	35 µL	8 µL	15 µL	20 µL	15 µL	15 µL
Plate Selection from Chromatography Data System	ANSI-96-well 350 µL	ANSI-96-well 1 mL	ANSI-96-well 1 mL	ANSI-96-well 2 mL	ANSI-384-well 250 uL	ANSI-384-well 100 µL

	96-Well Glass Inserts	
Glass Insert 96-Well Plates	700 µL	1 mL
Plate for Quick Load Inserts, 20/pk	186001438	186001438
Quick-Load Glass Insert, 1/pk	186001437(DV)	186001436(DV)
96-Well Plate with Inserts	186000349(DV) 1/pk	186000855(DV) 18/pk
Pre-Slit PTFE Silicone Seal, 5/pk (blue) - Seals Against Plate Wall	186000857	—
Pre-Slit PTFE Silicone Seal, 5/pk (clear) - Seals Against Plate Wall	186006335	—
Pre-Slit PTFE Silicone Seal, 10/pk (blue) - Seals Inside Glass Insert	—	186000856
Pre-Slit PTFE Silicone Seal, 5/pk (clear) - Seals Inside Glass Insert	—	186006332
Clear Polyester Heat Seal, 100/pk	186002788	—
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	—
Adhesive Seal*, 100/pk	186006336	—
Residual Volume in ACQUITY at Default Needle Placement of 2 mm	15 µL	15 µL
Plate Selection from Chromatography Data System	ANSI-96-well 700 µL Glass Insert	ANSI-96-well 1 mL Glass Insert

When (DV) appears beside a number, a deactivated version of the part can be ordered by adding a DV to the right of the part number.
* Adhesive seal is designed for use with buffer solutions and can tolerate alcohols and acetonitrile content in buffers.

Quick-Load Inserts for 96-Well Plates

Quick-load packs are the easy and fast way to load your plate with glass inserts.

Plates for ACQUITY UPLC, ACQUITY UPLC I-Class, ACQUITY UPLC M-Class, nanoACQUITY UPLC, and ACQUITY UPC²

Fixed Loop (FL), PEEK and PEEKSil Needles

	96-Well Plates				384-Well Plates	
Well Shape						
Plates	186002643	186005837	186002481	186002482	186002632	186002631
Pack Size	100	25	50	50	50	50
Well Volume	350 µL	700 µL	800 µL	2 mL	250 µL	100 µL
Sealing Options						
Polypropylene Cap Mat, 50/pk	—	186002483	186002483	186002484	—	—
Clear Polyester Heat Seal, 100/pk	186002788	186002788	186002788	186002788	186002788	186002788
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	186002789	186002789	186002789	186002789	186002789
Adhesive Seal*, 100/pk	186006336	186006336	186006336	186006336	186006336	186006336
Number of Plates in Sample Organizer	21	10	10	7	10	21
Shape	round	round	round	square	square	square
Bottom	round	conical	conical	conical	conical	conical
Material	PP	PP	PP	PP	PP	PP
Height of Plate	14 mm	31 mm	31 mm	42.5 mm	22 mm	15.5 mm
Well Depth	11.25 mm	27 mm	27 mm	39 mm	19.5 mm	12.3 mm
Residual Volume in ACQUITY at Default Needle Placement of 2 mm	35 µL	8 µL	15 µL	20 µL	15 µL	15 µL
Plate Selection from Chromatography Data System	ANSI-96-well 350 µL	ANSI-96-well 1 mL	ANSI-96-well 1 mL	ANSI-96-well 2 mL	ANSI-384-well 250 µL	ANSI-384-well 100 µL

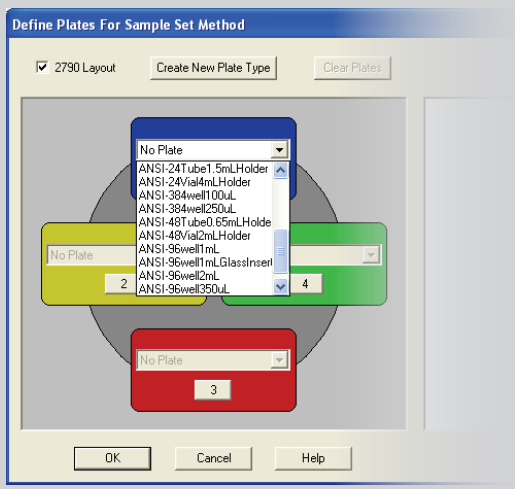
* Adhesive seal is designed for use with buffer solutions and can tolerate alcohols and acetonitrile content in buffers.

	96-Well Glass Inserts
Glass Insert 96-Well Plates	700 µL
Plate for Quick Load Inserts, 20/pk	186001438
Quick-Load Glass Insert, 1/pk	186001437(DV)
96-Well Plate with Inserts	186000349(DV)
Clear Polyester Heat Seal, 100/pk	186002788
Aluminum Foil Laminate Heat Seal, 100/pk	186002789
Adhesive Seal*, 100/pk	186006336
Residual Volume in ACQUITY at default needle placement of 2 mm	15 µL
Plate Selection from Chromatography Data System	ANSI-96-well 700 µL Glass Insert

When (DV) appears beside a number, a deactivated version of the part can be ordered by adding a DV to the right of the part number.

Plate Selection

Chromatographic Data System: Plate Selection indicates a preprogrammed geometric plate configuration with the proper x, y, and z dimensions for the plate. Select the proper plate from the drop-down menu.



Vials for ACQUITY UPLC H-Class and ACQUITY UPLC I-Class

Flow Through Needle (FTN)

12 x 32 mm	Clear	Amber	Max Recovery	Amber Max	300 µL PP	750 µL PP	Clear Glass with Septumless Cap	Total Recovery
								
	1	2	3	4	5	6	7	8
TruView LCMS Certified Combination Packs								
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	186005666CV	186005661CV	186005662CV	186005670CV	—	—	—	186005663CV
LCMS Certified Combination Packs								
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	600000668CV	600000669CV	600000670CV	600000755CV	—	—	—	600000671CV
LC/GC Certified Combination Packs								
Bonded Pre-Slit Silicone/ PTFE Septum	186000307C	186000847C	186000327C	186003886C	—	—	—	186000385C
Combination with PE Septumless Cap	186004132C	186004133C	186004168C	—	—	—	186004132C	186004167C
Combination Packs								
Bonded Pre-Slit Silicone/ PTFE Septum Deactivated	186000307DV	186000847DV	186000327DV	—	—	—	—	186000385DV
Bonded Pre-Slit Silicone/ PTFE Septum	—	—	—	—	186002639	186005221	—	—
Combination with PE Septumless Cap	—	—	—	—	186004112	—	—	—
Injectable Volumes ACQUITY UPLC								
Max	1450 µL	1450 µL	1365 µL	1365 µL	290 µL	610 µL	1450 µL	940 µL
Residual	360 µL	360 µL	135 µL	135 µL	10 µL	90 µL	360 µL	10 µL
Vial Selection from ACQUITY Sampler Manager	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder	ANSI-48 Vial 2 mL Holder
Storage Cap								
Black Solid 9 mm Cap with Silicone/PTFE Liner	186007187	186007187	186007187	186007187	186007187	186007187	186007187	186007187

When (DV) appears beside a number, a deactivated version of the part can be ordered by adding a DV to the right of the part number.

ACQUITY UPLC Sample Needles

System	Needle	Part No.	Description
ACQUITY UPLC	FL	700002644	PEEK, 30 µL
	FL	700002708	PEEKsil, 15 µL
	FL	205000369	FEP with Stainless Steel Tip, 30 µL
	FL	205000370	FEP with Stainless Steel Tip, 15 µL
	FL	205000362	Stainless Steel, 30 µL
	FL	205000363	Stainless Steel, 15 µL
	FL	205000507	Peptide Needle Kit – Contains 15 µL PEEKsil with PEEKsilL 20 µL Loop
	FL	700005179	PEEKsil Assembly, 250 µL
ACQUITY UPLC H-Class	FTN	700005215	H-Class, Stainless Steel, 15 µL
	FTN	700005279	H-Class, Stainless Steel, 30 µL
	FTN	700005421	H-Class Bio, MP35N, 15 µL
ACQUITY UPLC I-Class	FTN	700008977	Stainless Steel Assembled Needle with Guide and Seat, 15 µL
	FTN	700005421*	H-Class Bio, MP35N, 15 µL

System	Needle	Part No.	Description
ACQUITY UPLC I-Class	FL	700005923	I-Class, PEEK Needle, 10 µL
	FL	700005924	I-Class, Stainless Steel Needle, 10 µL
	FL	700005927	I-Class, PEEK Needle, 20 µL
	FL	700005928	I-Class, Stainless Steel Needle, 20 µL
	FL	700005925	I-Class, FEP/Metal Tipped Needle, 10 µL
	FL	700005929	I-Class, FEP/Metal Tipped Needle, 20 µL
	FL	700005926	I-Class, PEEKsil Needle, 10 µL
	FL	700005930	I-Class, PEEKsil Needle, 20 µL
ACQUITY UPLC M-Class	FL	700005926	10 µL PEEKsil Needle
	FL	700005924	10 µL Stainless Steel Needle
ACQUITY UPC[2]	FL	700009095	PEEK, 10 µL
nanoACQUITY UPLC	FL	700002708	PEEKsil, 15 µL
	FL	205000363	Stainless Steel, 15 µL
	FL	205000370	FEP/ Metal Tipped Needle, 15 µL

** Currently the ACQUITY UPLC I-Class SM-FTN is available with stainless steel needle only and optional stainless steel extension loops. The SM-FTN is fully compatible with H-Class MP35N fabricated needle and extension loops if necessary, but the dispersion performance will be impacted.*

Plates for ACQUITY UPLC H-Class and ACQUITY UPLC I-Class

Flow Through Needle

	96-Well Plates				384-Well Plates
Well Shape					
Plates	186002643	186005837	186002481	186002482	186002632
Pack Size	100	25	50	50	50
Well Volume	350 µL	700 µL	800 µL	2 mL	250 µL
Sealing Options					
PTFE/Silicone Pre-Slit, 5/pk	186006332	186006332	186006332	186006335	—
Clear Polyester Heat Seal, 100/pk	186002788	186002788	186002788	186002788	186002788
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	186002789	186002789	186002789	186002789
Adhesive Seal*, 100/pk	186006336	186006336	186006336	186006336	186006336
Number of Plates in Sample Organizer	21	10	10	7	10
Shape	round	round	round	square	square
Bottom	round	conical	conical	conical	conical
Material	PP	PP	PP	PP	PP
Height of Plate	14 mm	31 mm	31 mm	42.5 mm	22 mm
Well Depth	11.25 mm	27 mm	27 mm	39 mm	19.5 mm
Residual Volume in ACQUITY at default needle placement of 2 mm	35 µL	8 µL	15 µL	20 µL	15 µL
Plate Selection from Chromatography Data System	ANSI-96-well 350 µL	ANSI-96-well 1 mL	ANSI-96-well 1 mL	ANSI-96-well 2 mL	ANSI-384-well 250 µL

* Adhesive seal is designed for use with buffer solutions and can tolerate alcohols and acetonitrile content in buffers.

	96-Well Glass Inserts	
Glass Insert 96-Well Plates	700 µL	1 mL
Plate for Quick Load Inserts, 20/pk	186001438	186001438
Quick-Load Glass Insert, 1/pk	186001437(DV)	186001436(DV)
96-Well Plate with Inserts	186000349(DV) 1/pk	186000855(DV) 18/pk
Pre-Slit PTFE Silicone Seal, 5/pk (blue) - seals against plate wall	186000857	—
Pre-Slit PTFE Silicone Seal, 5/pk (clear) - seals against plate wall	186006335	—
Pre-Slit PTFE Silicone Seal, 10/pk (blue) - seals inside glass insert	—	186000856
Pre-Slit PTFE Silicone Seal, 5/pk (clear) - seals inside glass insert	—	186006332
Clear Polyester Heat Seal, 100/pk	186002788	—
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	—
Adhesive Seal*, 100/pk	186006336	—
Residual Volume in ACQUITY at default needle placement of 2 mm	15 µL	15 µL
Plate Selection from Chromatography Data System	ANSI-96-well 700 µL Glass Insert	ANSI-96-well 1 mL Glass Insert

When (DV) appears beside a number, a deactivated version of the part can be ordered by adding a DV to the right of the part number.
* Adhesive seal is designed for use with buffer solutions and can tolerate alcohols and acetonitrile content in buffers.

ACQUITY HPLC H-Class System

Determine the ACQUITY UPLC Fixed Loop (FL) Needle Type

To select approved vials, plates and plate seals for the ACQUITY UPLC System with FL needles, you must identify the needle type being used. For analysts that are not certain of the needle in use, follow this procedure to identify the needle.

The needle is plumbed into the injector valve in the Sample Manager. The injector valve is located on the right, front side of the sample manager. Open the drawer (or door) on the right, front side of the Sample Manager to view the injector valve. The needle will be plumbed into one of the ports in the valve.

Determine the port for the needle by referring to the table for the ACQUITY UPLC System being used. Look at the color of the tubing near the fitting in the identified port. The color of the tube indicates what type of needle is used. There may be a heat shrink tube over the tube near the fitting in the port. You should still be able to see some of the tubing before it enters sample compartment of the Sample Manager. From the table below, the tubing color indicates the needle type. FTN are included in the table below as a reference. For ACQUITY UPLC FTN Systems (flow through needles) refer to tables for FTN approved vials and plates.

System Port Needle Location

System	Port for Sample Needle
nanoACQUITY UPLC	2
ACQUITY UPLC M-Class	2
ACQUITY UPLC FL	3
ACQUITY UPLC I-Class FL	3
ACQUITY UPC^2 FL	3
ACQUITY UPLC H-Class FTN	4
ACQUITY UPLC I-Class FTN	4

FL: Fixed Loop Needle, FTN: Flow Through Needle.

Table Page for Approved Plates and Seals

ACQUITY UPLC FL Needles		
Tubing Color	**Needle Type**	**Page #**
Clear or Metal	Metal or Metal-Tipped FL	13
Green or Tan	PEEK and PEEKsil FL	14

Waters Autosampler Vials, Plates, and Seals for Use with Alliance HPLC Systems

Waters offers a complete selection of vials, including certified vials and low recovery vials suited to the needle designs used in Alliance Systems. We also offer a complete line of plate and seal options for the Alliance 2790/2795 HTS System.

Settings for Alliance 2690 & 2695 Vials and Low Volume Inserts (LVI)

The Waters 2690 Separations Module is set initially to accept vials with a bottom thickness <1.6 mm. Any vial that does not meet this criteria should not be used without first adding a positive needle offset to the "sample draw depth." Failure to do so can cause vial breakage or needle damage.

Vial Column Number	Description	Average Thickness	Needle Offset	Notes*	Comments
17	Screw Cap Glass Vial	0.037" (0.93 mm)	0	1,3	Add at least 1 mm offset when used with LVI
18	Screw Cap Glass Vial	0.037" (0.93 mm)	0	1,3	Add at least 1 mm offset when used with LVI
20	Polypropylene Screw Neck Vial (300 µL)	0.037" (0.93 mm)	1 mm	—	—
21	Polypropylene Snap Cap Vial (750 µL)	0.037" (0.93 mm)	1 mm	—	—
23	Total Recovery Vial	0.037" (0.93 mm)	0	—	—
25	Snap Cap Glass Vial	0.063" (1.59 mm)	0	1,3	Add at least 1 mm offset when used with LVI
30	Crimp Cap Vial	0.068" (1.72 mm)	1 mm	2,3	Variable thickness; Add at least 1 mm offset when used with LVI
17	Low Volume Insert (300 µL)	0.024" (0.61 mm)	1 mm	4	Use with vials with neck opening, 6 mm
17	Low Volume Insert (150 µL)	0.028" (0.71 mm)	1 mm	4	Use with vials with neck opening, 6 mm
9	Low Volume Insert (300 µL) in Screw	0.062" (1.57 mm)	1 mm	1	Recommended configuration for this LVI
22	Cap Vial (7 mm neck)	0.062" (1.57 mm)	—	—	Recommended configuration for this LVI

*Notes:
1. Clears needle tip—no offset required. Meets the criteria of a bottom thickness <1.6 mm.
2. Does not clear needle tip—positive needle offset should be used.
3. Designed to accept Waters low volume inserts (LVI's)—at least 1 mm offset should be added.
4. This dimension should be added to vial bottom thickness and result checked against the criteria for bottom thickness.

Alliance 2690 and 2695 Needle Offset

Settings for Alliance 2690 and 2695	
Vial	**Needle Offset (add)**
300 µL Polypropylene Vial	1 mm
750 µL Polypropylene Vial	1 mm
Crimp Cap Vial	1 mm
Low Volume Insert and Vial	1 mm

Alliance HPLC System

Quick Selection Guide

Vials for Alliance 2690/2695/e2695 & 2790/2795 Systems

This selection of 12 x 32 mm vials are the most commonly ordered vials by customers using Waters Alliance Separations Modules. This page is intended to be a quick selection guide. For the complete selection of vials and accessories for Alliance, turn to page 20.

12 x 32 mm	Clear	Amber	Max Recovery	300 µL PP	10 mm Cap Clear	Total Recovery	Amber Max	Clear Glass with Septumless Cap
								
	9	10	11	12	13	14	15	16
Compatible Systems								
Alliance 2690/2695	•	•		•	•	•		•
Alliance 2790/2795	•	•	•	•	•		•	•
TruView LCMS Certified Combination Packs								
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	186005666CV	186005661CV	186005662CV	—	—	186005663CV	186005670CV	—
LCMS Certified Combination Packs								
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	600000668CV	600000669CV	600000670CV	—	—	600000671CV	600000755CV	—
LC/GC Certified Combination Packs								
Bonded Pre-Slit Silicone/ PTFE Septum	186000307C	186000847C	186000327C	186002639*	—	186000385C	186003886C	—
Bonded Silicone/PTFE Septum	—	—	—	—	WAT270946C	—	—	—
Combination with PE Septumless Cap	—	—	—	—		—	—	186004132C
Combination Packs								
Combination Deactivated	186000307DV	186000847DV	186000327DV	—	—	186000385DV	—	—
Injectable Volumes Alliance 2690/2695								
Max	1100 µL	1100 µL	—	280 µL	1100 µL	950 µL	—	1100 µL
Residual	750 µL	750 µL	—	20 µL	750 µL	9 µL	—	750 µL
Injectable Volumes Alliance 2790/2795								
Max	1700 µL	1700 µL	1500 µL	290 µL	1700 µL	—	1500 µL	1700 µL
Residual	170 µL	170 µL	22 µL	10 µL	170 µL	—	22 µL	170 µL
Insert								
150 µL with Poly Spring	WAT094171 (DV)	WAT094171 (DV)	—	—	WAT094171 (DV)	—	—	WAT094171 (DV)
Max Volume Injection/ Max Residual Volume	144 µL/6 µL	144 µL/6 µL	—	—	144 µL/6 µL	—	—	144 µL/6 µL
Storage Cap								
Black Solid 9 mm Cap with Silicone/PTFE Liner for Sample Storage	186007187	186007187	186007187	186007187	—	186007187	186007187	186007187

When (DV) appears beside a number, a deactivated version of the part can be ordered by adding a DV to the right of the part number.
* Not certified

Screw Cap Vials for Alliance 2690/2695/e2695 & 2790/2795 Systems

12 x 32 mm

	Clear	Amber	Max Recovery	300 µL PP	750 µL PP	10 mm Cap Clear	Total Recovery	Amber Max
								
	17	18	19	20	21	22	23	24
Compatible Systems								
Alliance 2690/2695	•	•		•	•	•	•	
Alliance 2790/2795	•	•	•	•	•	•		•
TruView LCMS Certified Combination Packs								
Vial, Cap, and Silicone/PTFE Septum	186005660CV	186005667CV	186005668CV	—	—	—	186005669CV	186005664CV
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	186005666CV	186005661CV	186005662CV	—	—	—	186005663CV	186005670CV
LCMS Certified Combination Packs								
Vial, Cap, and Silicone/PTFE Septum	600000751CV	600000752CV	600000749CV	—	—	—	600000750CV	600000754CV
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	600000668CV	600000669CV	600000670CV	—	—	—	600000671CV	600000755CV
LC/GC Certified Combination Packs								
Bonded Silicone/PTFE Septum	186000272C	186000846C	186000326C	186002640[3]	186005220[3]	WAT270946C[2]	186000384C	186003885C
Combination Deactivated[3]	186000272DV	186000846DV	186000326DV	—		WAT270946DV[2]	186000384DV	—
Bonded Pre-Slit Silicone/PTFE Septum	186000307C	186000847C	186000327C	186002639[3]	186005221[3]	—	186000385C	186003886C
Combination Deactivated[3]	186000307DV	186000847DV	186000327DV	—	—	—	186000385DV	—
Combination with PE Septumless Cap	186004132C	186004133C	186004168C	186004112[3]	—	—	186004167C	—
LC/GC Certified Combination Pack with Cap and PTFE Septum	186007193C	186007194C	186007195C	—	—	—	186007197C	186007196C
Certified combination pack with Cap and LB silicone/PTFE septum	186007199C	186007200C	186007201C	—	—	—	186007203C	186007202C
Vials Only								
Vials Only	186000273	186000848	186002802	186002626	186005219	WAT063300	186002805	—
Deactivated Vials Only	186000273DV	186000848DV	—	—	—	WAT063300DV	—	—
Injectable Volumes Alliance 2690/2695								
Max	1100 µL	1100 µL	—	280 µL	400 µL	1100 µL	950 µL	—
Residual	750 µL	750 µL	—	20 µL	300 µL	750 µL	9 µL	—
Injectable Volumes Alliance 2790/2795								
Max	1700 µL	1700 µL	1500 µL	290 µL	530 µL	1700 µL	—	1500 µL
Residual	170 µL	170 µL	22 µL	10 µL	170 µL	170 µL	—	22 µL
Inserts								
300 µL with Poly Spring	WAT094170(DV)	WAT094170(DV)	—	—	—	WAT094170(DV)	—	—
Max Volume Injection/Max Residual Volume	230 µL/20 µL	230 µL/20 µL	—	—	—	230 µL/20 µL	—	—
150 µL with Poly Spring	WAT094171(DV)	WAT094171(DV)	—	—	—	WAT094171(DV)	—	—
Max Volume Injection/Max Residual Volume	144 µL/6 µL	144 µL/6 µL	—	—	—	144 µL/6 µL	—	—
Black Screw Cap for TruView Vials								
PTFE/Silicone Septum	186005826	186005826	186005826	—	—	—	186005826	186005826
Pre-Slit PTFE/Silicone Septum	186005827	186005827	186005827	—	—	—	186005827	186005827
Light Blue Screw Cap for LCMS Certified Vials								
PTFE/Silicone Septum	186005828	186005828	186005828	—	—	—	186005828	186005828
Pre-Slit PTFE/Silicone Septum	186005829	186005829	186005829	—	—	—	186005829	186005829
Screw Cap and Septum–Silicone/PTFE								
PE Septumless Cap	186004169	186004169	186004169	186004169	186004169	—	186004169	186004169
Blue LectraBond	186000274	186000274	186000274	186000274	186000274	—	186000274	186000274
Red LectraBond	186002129	186002129	186002129	186002129	186002129	—	186002129	186002129
Green LectraBond	186002130	186002130	186002130	186002130	186002130	—	186002130	186002130
White LectraBond	186002456	186002456	186002456	186002456	186002456	—	186002456	186002456
Black Cap with PTFE Septum, 100/pk	186007198	186007198	186007198	186007198	186007198	—	186007198	186007198
Screw Cap and Pre-Slit Septum–Silicone/PTFE								
Blue LectraBond	186000305	186000305	186000305	186000305	186000305	—	186000305	186000305
Red LectraBond	186002128	186002128	186002128	186002128	186002128	—	186002128	186002128
Green LectraBond	186002127	186002127	186002127	186002127	186002127	—	186002127	186002127
White LectraBond	186002457	186002457	186002457	186002457	186002457	—	186002457	186002457
For Dissolution System								
Pre-Assembled Vial, Cap, and Pre-Slit Septum	186000989(DV)	186003455	—	—	—	—	—	—
Storage Cap								
Black Solid 9 mm Cap with Silicone/PTFE Liner for Sample Storage	186007187	186007187	186007187	186007187	186007187	186007187	186007187	186007187

All items come in quantities of 100 unless otherwise noted. When (DV) appears beside the part number, a deactivated version of this product can be ordered by adding DV to the right of the part number.
[2] Septum not bonded. [3] Vials not certified.

Snap and Crimp Cap Vials for Alliance 2690/2695/e2695 & 2790/2795 Systems

12 x 32 mm	Clear	Amber	Max Recovery	300 µL PP	750 µL PP	Clear Glass Crimp	Amber Crimp	Total Recovery
								
	25	26	27	28	29	30	31	32
Compatible Systems								
Alliance 2690/2695	•	•		•	•	•	•	•
Alliance 2790/2795	•	•	•	•	•	•	•	
Combination Packs								
Vial, Cap, and Silicone/PTFE Septum	—	—	—	186002642	186005223	—	—	186000234(DV)
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	—	—	—	186002641	186005222	—	—	—
Vials								
Vials Only	WAT094219	WAT094220	186000984	186002628	186005224	WAT094222	WAT094223	186000302
Deactivated Vials Only	WAT094219DV	WAT094220DV	186000984DV	—	—	WAT094222DV	WAT094223DV	186000302DV
Injectable Volumes Alliance 2690/2695								
Max	1100 µL	1100 µL	—	280 µL	400 µL	1100 µL	1100 µL	950 µL
Residual	750 µL	750 µL	—	20 µL	300 µL	750 µL	750 µL	9 µL
Injectable Volumes Alliance 2790/2795								
Max	1700 µL	1700 µL	1500 µL	290 µL	530 µL	1700 µL	1700 µL	—
Residual	170 µL	170 µL	22 µL	10 µL	170 µL	170 µL	170 µL	—
Inserts								
300 µL with Poly Spring	WAT094170(DV)	WAT094170 (DV)	—	—	—	WAT094170(DV)	WAT094170(DV)	—
Max Volume Injection/Max Residual Volume	230 µL/20 µL	230 µL/20 µL	—	—	—	230 µL/20 µL	230 µL/20 µL	—
150 µL with Poly Spring	WAT094171(DV)	WAT094171 (DV)	—	—	—	WAT094171(DV)	WAT094171(DV)	—
Max Volume Injection/Max Residual Volume	144 µL/6 µL	144 µL/6 µL	—	—	—	144 µL/6 µL	144 µL/6 µL	—
Snap Cap and Septum–Silicone/PTFE								
Blue	186000303	186000303	186000303	186000303	186000303	—	—	186000303
Black	186002649	186002649	186002649	186002649	186002649	—	—	186002649
Red	186002650	186002650	186002650	186002650	186002650	—	—	186002650
Snap Cap and Pre-Slit Septum–Silicone/PTFE								
Blue	186000304	186000304	186000304	186000304	186000304	—	—	186000304
Black	186002648	186002648	186002648	186002648	186002648	—	—	186002648
Red	186002647	186002647	186002647	186002647	186002647	—	—	186002647
Snap Cap and PTFE Septum								
Blue	186000328	186000328	186000328	186000328	186000328	—	—	186000328
Black	186002645	186002645	186002645	186002645	186002645	—	—	186002645
Red	186002646	186002646	186002646	186002646	186002646	—	—	186002646
Crimp Cap								
Crimp Cap Silicone/PTFE Septum	—	—	—	—	—	PSL404219	PSL404219	—
Crimp Cap PTFE/Silicone/PTFE Septum	—	—	—	—	—	PSL404231	PSL404231	—
Crimp Cap with Silicone/PTFE Septa	—	—	—	—	—	186006967	186006967	—
Crimper	—	—	—	—	—	PSL904301	PSL904301	—

All items come in quantities of 100 unless otherwise noted.
When (DV) appears beside the part number, a deactivated version of this product can be ordered by adding DV to the right of the part number.
[2] Septum not bonded.
[3] Vials not certified.

Plates for Alliance 2790/2795 Systems

	96-Well Plates				384-Well Plates	
Well Shape						
Plates	186002643	186005837	186002481	186002482	186002632	186002631
Pack Size	100	25	50	50	50	50
Well Volume	350 µL	700 µL	800 µL	2 mL	250 µL	100 µL
Sealing Options						
PTFE/Silicone, 5/pk	186006333	186006333	186006333	186006334	—	—
PTFE/Silicone Pre-Slit, 5/pk	186006332	186006332	186006332	186006335	—	—
Polypropylene Cap Mat, 50/pk	186002483	186002483	186002483	186002484	—	—
Clear Polyester Heat Seal, 100/pk	186002788	186002788	186002788	186002788	186002788	186002788
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	186002789	186002789	186002789	186002789	186002789
Adhesive Seal*, 100/pk	186006336	186006336	186006336	186006336	186006336	186006336
Number of Plates in Sample Organizer	**21**	**10**	**10**	**7**	**10**	**21**
Shape	round	round	round	square	square	square
Bottom	round	conical	conical	conical	conical	conical
Material	PP	PP	PP	PP	PP	PP
Height of Plate	14 mm	31 mm	31 mm	42.5 mm	22 mm	15.5 mm
Well Depth	11.25 mm	27 mm	27 mm	39 mm	19.5 mm	12.3 mm
Residual Volume in Alliance 2795 at Default Needle Placement of 2 mm	35 µL	8 µL	15 µL	20 µL	15 µL	15 µL

* Adhesive seal is designed for use with buffer solutions and can tolerate alcohols and acetonitrile content in buffers.

Roller for Cap Mats

Description	
Roller for Cap Mats	186002633

Holder for 12 x 32 mm Vials

Description	
Holder for 12 x 32 mm Vials, 5/pk	186004487

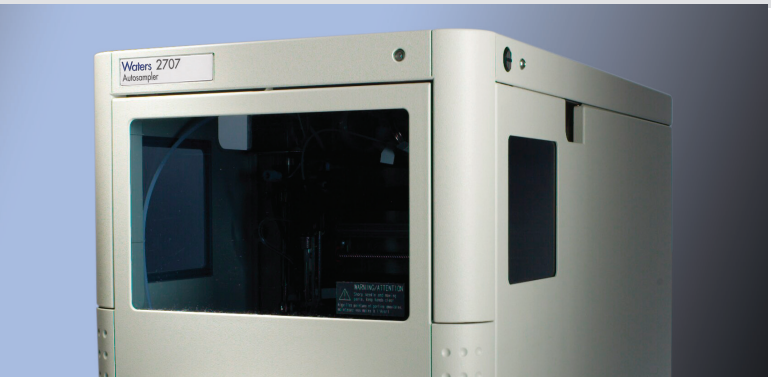
Vials for Waters 717 Autosampler

15 x 45 mm	4 mL Screw Neck	Amber Screw Neck	Total Recovery	PP Screw Neck Vial	PP Conical	Glass Shell Vial	Amber Glass Shell Vial
							
48 Position Carousel	33	34	35	36	37	38	39
Combination Packs							
Vial, Cap, and LectraBond PTFE/Silicone Septum	186000838C	186001133C	186002629C	—	—	—	—
Combination Deactivated	186000838DV	186001133DV	—	—	—	—	—
Vial, Cap, and LectraBond Pre-Slit PTFE/Silicone Septum	186000839C	186001134C	186002630C	—	—	—	—
Combination Deactivated	186000839DV	186001134DV	—	—	—	—	—
Vial and PE Snap Cap	—	—	—	—	186004031	WAT025051	WAT025050
Components							
Vials Only	186000840(DV)	186001135(DV)	186002520	186000999[2]	—	—	—
Max Volume Injection/Max Residual Volume	2400 µL/1600 µL	2400 µL/1600 µL	3000 µL/40 µL	2000 µL/1000 µL	2950 µL/50 µL	2400 µL/1600 µL	2400 µL/1600 µL
Cap LectraBond PTFE/Silicone 100/pk	186000841	186000841	186000841	186000841	—	—	—
Screw Cap with Bonded PTFE/Silicone Septum, 1,000/pk	186000965	186000965	186000965	186000965	—	—	—
Cap LectraBond Pre-Slit PTFE/Silicone, 100/pk	186000842	186000842	186000842	186000842	—	—	—
Black Phenol Cap, 144/pk	WAT072711	WAT072711	WAT072711	WAT072711	—	—	—
PTFE Septum, 1,440/pk	WAT073005	WAT073005	WAT073005	WAT073005	—	—	—
PTFE Septum, 144/pk	WAT072714	WAT072714	WAT072714	WAT072714	—	—	—
Self Sealing Septum, 144/pk	WAT022861	WAT022861	WAT022861	WAT022861	—	—	—
250 µL Glass Insert[3]	WAT072704(DV)	WAT072704(DV)	—	WAT072704	—	—	—
Max Volume Injection/Max Residual Volume	244 µL/6 µL	244 µL/6 µL	—	—	—	—	—
250 µL Glass Insert, 144/pk[3]	WAT015199(DV)	WAT015199(DV)	—	—	—	—	—
Max Volume Injection/Max Residual Volume	230 µL/20 µL	230 µL/20 µL	—	—	—	—	—
250 µL Plastic Conical Insert (PMP), 144/pk[3]	WAT072030	WAT072030	—	—	—	—	—
Max Volume Injection/Max Residual Volume	230 µL/20 µL	230 µL/20 µL	—	—	—	—	—
Springs for LVI, 100/pk	WAT072708	WAT072708	—	—	—	—	—
250 µL PP Insert, 1,000/pk[3]	186001729	186001729	—	—	—	—	—
Storage Cap							
Solid black cap with Silicone/PTFE Liner for Sample Storage	186007224	186007224	186007224	—	—	—	—

When (DV) appears beside the part number, a deactivated version of this product can be ordered by adding DV to the right of the part number. [2] Item contains 1,000 vials. [3] Inserts requires springs (Part No. WAT072708)

8 x 40 mm	1 mL Shell	Amber	Total Recovery	PP Conical
				
96 Position Carousel	40	41	42	43
Shell Vial and Snap Cap	WAT025054C	WAT025053C	186000837C	WAT022476[2]
Shell Vial and Snap Cap Deactivated	WAT025054DV	WAT025053DV	186000837DV	—
Pack Size	250	250	100	100
Max Volume Injection/Max Residual Volume	600 µL/400 µL	600 µL/400 µL	700 µL/6 µL	650 µL/50 µL
150 µL Glass Insert	WAT072294(DV)	WAT072294(DV)	—	—
Max Volume Injection/Max Residual Volume	144 µL/6 µL	144 µL/6 µL	—	—
PE Snap Cap, 1,000/pk	WAT078515	WAT078515	WAT078515	WAT078515
200 µL PE Grad Insert with Poly Spring, 1,000/pk	186001728	186001728	—	—
1 mL Shell Vial Assembled for Dissolution System, 500/pk	WAT022479	—	—	—

All items come in quantities of 100 unless otherwise noted. When (DV) appears beside the part number, a deactivated version of this product can be ordered by adding DV to the right of the part number. [2] Vials not certified.



Waters Autosampler Vials, Plates, and Seals for Use with Other Waters Systems

Vials for GPC 2000

	4 mL Screw Cap	10 mL Screw Neck
		
	75	76
Components		
Vial	186000840	186001420
Black Screw Cap	600000162	186001421
PTFE Septum	WAT072714[1]	186001422
Black Solid 9 mm Cap with Silicone/PTFE Liner for Sample Storage, 4 mL	186007224	186007224

[1] Item contains 144 vials.

Vials for Aqua Analysis System

Components	
22 mL Vial with Pre-Slit Silicone/PTFE Septum, 100/pk	186004108
Solid Cap, PTFE/Silicone Liner, 100/pk	186004109
Mailing Box for 22 mL vials, 100/pk	186004111

Vials for PATROL UPLC Process Analyzer

Components	
15 x 75 mm Clear Glass with PTFE/Silicone Non-slit Septum, 100/pk	186004902C
15 x 75 mm Clear Glass with PTFE/Silicone Slit Septum, 100/pk	186004903C
15 x 75 mm Clear Glass Total Recovery Vial only 100/pk	186007573

Screw Cap Vials for Waters 2707 Autosampler

12 x 32 mm	Clear	Amber	Max Recovery	Amber Max	300 µL PP	10 mL Screw Neck
						
	44	45	46	47	48	49
LCMS Certified Combination Packs						
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	600000668CV	600000669CV	600000670CV	600000755CV	—	—
LC/GC Certified Combination Packs						
Bonded Pre-Slit Silicone/PTFE Septum	186000307C	186000847C	186000327C	186003886C	—	—
Bonded Pre-Slit Silicone/PTFE Septum Deactivated	186000307DV	186000847DV	186000327DV	—	—	—
Bonded Silicone/PTFE Septum	186000272C	186000846C	186000326C	186003885C	—	—
Combination Packs						
Bonded Pre-Slit Silicone/PTFE Septum	—	—	—	—	186002639	—
Bonded Silicone/PTFE Septum	—	—	—	—	186002640	—
Injectable Volumes ACQUITY UPLC						
Max	1600 µL	1600 µL	1100 µL	1100 µL	240 µL	—
Residual	150 µL	150 µL	10 µL	10 µL	10 µL	—
Components						
150 µL with Poly Spring	WAT094171	WAT094171	—	—	—	—
Max Volume Injection/Max Residual Volume	144 µL/6 µL	144 µL/6 µL	—	—	—	—
22 x 45 mm Clear Glass Vial	—	—	—	—	—	186001420
Cap with X-Slit PTFE Silicone Septa	—	—	—	—	—	186004632
Storage Cap						
Black Solid 9 mm Cap with Silicone/PTFE Liner for Sample Storage	186007187	186007187	186007187	186007187	186007187	—

All items come in quantities of 100 unless otherwise noted. For more details, see vials descriptions on page 31.

Plates for Waters 2707 Autosampler

Well Shape	96-Well Plates				384-Well Plates	
						
Plates	186002643	186005837	186002481	186002482	186002632	186002631
Pack Size	100	25	50	50	50	50
Well Volume	350 µL	700 µL	800 µL	2 mL	250 µL	100 µL
Sealing Options						
PTFE/Silicone, 5/pk	186006333	186006333	186006333	186006334	—	—
PTFE/Silicone, Pre-slit, 5/pk	186006332	186006332	186006332	186006335	—	—
Polypropylene Cap Mat, 50/pk	186002483	186002483	186002483	186002484	—	—
Clear Polyester Heat Seal, 100/pk	186002788	186002788	186002788	186002788	186002788	186002788
Aluminum Foil Laminate Heat Seal, 100/pk	186002789	186002789	186002789	186002789	186002789	186002789
Adhesive Seal*, 100/pk	186006336	186006336	186006336	186006336	186006336	186006336
Residual Volume	125 µL	20 µL	40 µL	60 µL	40 µL	40 µL

* Adhesive seal is designed for use with buffer solutions and can tolerate alcohols and acetonitrile content in buffers.

Waters Autosampler Vials for Compatible Systems

Waters vials are also compatible with other manufacturer's autosamplers allowing you to use the same quality vials on other systems in your lab.

Snap and Crimp Cap (9 mm Cap) Vials for Compatible Systems

12 x 32 mm	Clear	Amber	Max Recovery	Qsert Vial	PP 300 µL	PP 750 µL	Clear Crimp	Amber Crimp
								
	60	61	62	63	64	65	66	67
Compatible Systems								
Agilent Technologies, Beckman, Dynatech, Finnigan, Fisons, Gilson, Hitachi, LDC, Perkin-Elmer, Shimadzu, Spectra-Physics, Varian	•	•	•	•	•	•	•	•
CTC, Spark, Thermal Separations							•	•
Combination Packs								
Vial, Cap, and Silicone/ PTFE Septum	—	—	—	186001124(DV)	186002642	186005223	—	—
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	—	—	—	186001125(DV)	186002641	186005222	—	—
Vial, Cap, and PTFE Septum	—	—	—	186001127(DV)	—	—	—	—
Vials Only								
Vials Only	WAT094219	WAT094220	186000984	—	186002628	186005224	WAT094222	WAT094223
Deactivated Vials Only	WAT094219DV	WAT094220DV	186000984DV	—	—	—	WAT094222DV	WAT094223DV
Inserts								
300 µL with Poly Spring	WAT094170(DV)	WAT094170(DV)	—	—	—	—	WAT094170(DV)	WAT094170(DV)
150 µL with Poly Spring	WAT094171(DV)	WAT094171(DV)	—	—	—	—	WAT094171(DV)	WAT094171(DV)
Snap Cap and Septum–Silicone/PTFE								
Blue	186000303	186000303	186000303	186000303	186000303	186000303	—	—
Black	186002649	186002649	186002649	186002649	186002649	186002649	—	—
Red	186002650	186002650	186002650	186002650	186002650	186002650	—	—
Snap Cap and Pre-Slit Septum–Silicone/PTFE								
Blue	186000304	186000304	186000304	186000304	186000304	186000304	—	—
Black	186002648	186002648	186002648	186002648	186002648	186002648	—	—
Red	186002647	186002647	186002647	186002647	186002647	186002647	—	—
Snap Cap and PTFE Septum								
Blue	186000328	186000328	186000328	186000328	186000328	186000328	—	—
Black	186002645	186002645	186002645	186002645	186002645	186002645	—	—
Red	186002646	186002646	186002646	186002646	186002646	186002646	—	—
Crimp Cap								
Crimp Cap Silicone/ PTFE Septum	—	—	—	—	—	—	PSL404219	PSL404219
Crimp Cap PTFE/Silicone/ PTFE Septum	—	—	—	—	—	—	PSL404231	PSL404231

All items come in quantities of 100 unless otherwise noted.
When (DV) appears beside the part number, a deactivated version of this product can be ordered by adding DV to the right of the part number.

Screw Cap Vials for Compatible Systems

12 x 32 mm	Clear	Amber	Amber Max Recovery	Clear Glass Max Recovery	Qsert Vial	Amber Qsert	PP 300 µL	PP 750 µL	10 mm Cap	PP 250 µL 8 mm Cap
										
	50	51	52	53	54	55	56	57	58	59
Compatible Systems										
Agilent Technologies	•	•		•	•	•	•	•		
Alcott, Antek, CTC, Spark Thermal Separations									•	•
Beckman, Dynatech, Finnigan, Fisons, Gilson	•	•		•	•	•	•	•		
Hitachi, LDC, Perkin-Elmer, Shimadzu, Spectra-Physics, Thermo, Varian	•	•		•	•	•	•	•	•	•
LCMS Certified Combination Packs										
Vial, Cap, and -Silicone/ PTFE Septum	600000751CV	600000752CV	600000754CV	600000749CV	—	—	—	—	—	—
Vial, Cap, and Pre-Slit Silicone/PTFE Septum	600000668CV	600000669CV	600000755CV	600000670CV	—	—	—	—	—	—
LC/GC Certified Combination Packs										
Bonded Silicone/ PTFE Septum	186000272C	186000846C	186003885C	186000326C	186001126C	186001130C	—	—	WAT270946C[1]	—
Combination Deactivated[2]	186000272DV	186000846DV	—	186000326DV	186001126DV	186001130DV	—	—	WAT270946DV	—
Bonded Pre-Slit Silicone/PTFE Septum	186000307C	186000847C	186003886C	186000327C	186001128C	186001131C	—	—	—	—
Combination Deactivated[2]	186000307DV	186000847DV	—	186000327DV	186001128DV	186001131DV	—	—	—	—
Combination Packs										
Bonded Silicone/ PTFE Septum	—	—	—	—	—	—	186002640	186005220	—	—
Bonded Pre-Slit Silicone/ PTFE Septum	—	—	—	—	—	—	186002639	186005221	—	—
Vials Only										
Vials Only	186000273	186000848	—	186002802	186002804	186002803	186002626	186005219	WAT063300	WAT094172
Deactivated Vials Only	186000273DV	186000848DV	—	—	—	—	—	—	WAT063300DV	—
Inserts										
300 µL with Poly Spring	WAT094170	WAT094170	—	—	—		—	—	WAT094170	—
300 µL with Poly Spring Deactivated	WAT094170DV	WAT094170DV	—	—	—	—	—	—	WAT094170DV	—
150 µL with Poly Spring	WAT094171	WAT094171	—	—	—	—	—	—	WAT094171	—
150 µL with Poly Spring Deactivated	WAT094171DV	WAT094171DV	—	—	—	—	—	—	WAT094171DV	—
Cap and Septum										
PE Septumless Caps	186004169	186004169	186004169	186004169	186004169	186004169	186004169	—	—	—
Black Cap	—	—	—	—	—	—	—	—	WAT058875	186004717
Cap and Septum, Silicone/ PTFE, Assembled	—	—	—	—	—	—	—	—	—	WAT094174
Septum Only, PTFE/ Silicone, Pre-Slit	—	—	—	—	—	—	—	—	—	WAT058876
Septum Only, Silicone/PTFE	—	—	—	—	—	—	—	—	WAT058874	WAT210685
Septum Only, PTFE	—	—	—	—	—	—	—	—	—	WAT058886
Screw Cap and Septum–Silicone/PTFE										
Blue LectraBond	186000274	186000274	—	186000274	186000274	186000274	186000274	186000274	—	—
Red LectraBond	186002129	186002129	—	186002129	186002129	186002129	186002129	186002129	—	—
Green LectraBond	186002130	186002130	—	186002130	186002130	186002130	186002130	186002130	—	—
Screw Cap and Pre-Slit Septum–Silicone/PTFE										
Blue LectraBond	186000305	186000305	—	186000305	186000305	186000305	186000305	186000305	—	—
Red LectraBond	186002128	186002128	—	186002128	186002128	186002128	186002128	186002128	—	—
Green LectraBond	186002127	186002127	—	186002127	186002127	186002127	186002127	186002127	—	—
Storage Cap										
Black Solid 9 mm Cap with Silicone/PTFE Liner	186007187	186007187	186007187	186007187	186007187	186007187	186007187	186007187	—	—

All items come in quantities of 100 unless otherwise noted.
[1] Septum not bonded.
[2] Not certified.

Vials for Compatible Systems

15 x 45 mm	4 mL Screw Neck	Amber Screw Neck	Total Recovery	PP Screw Neck Vial	PP Snap Cap	Glass Shell Vial	Amber Glass Shell Vial
							
	68	69	70	71	72	73	74
Compatible Systems							
Bruker, Kontron, Perkin-Elmer, Shimadzu, Tosoh, Unicam	•	•	•	•	•	•	•
Combination Pack							
Vial, Cap, and LectraBond PTFE/Silicone Septum	186000838C	186001133C	186002629C	—	—	—	—
Combination Deactivated	186000838DV	186001133DV	—	—	—	—	—
Vial, Cap, and LectraBond Pre-Slit PTFE/Silicone Septum	186000839C	186001134C	186002630C		—	—	—
Combination Deactivated	186000839DV	186001134DV	—	—	—	—	—
Vial and PE Snap Cap	—	—	—	—	186004031	WAT025051	WAT025050
Components							
Vials Only	186000840	186001135	186002520	186000999[1]	—	—	—
Deactivated Vials Only	186000840DV	186001135DV	—	—	—	—	—
LectraBond Cap and Septum							
Black Cap PTFE/Silicone, 100/pk	186000841	186000841	186000841	—	—	—	—
Screw Cap with Bonded PTFE/Silicone Septum, 1,000/pk	186000965	186000965	186000965	186000965	—	—	—
Black Cap Pre-Slit PTFE/Silicone, 100/pk	186000842	186000842	186000842	—	—	—	—
Caps, Septa, and Inserts							
Black Phenol Cap, 144/pk	WAT072711	WAT072711	WAT072711	—	—	—	—
PTFE Septum, 1,440/pk	WAT073005	WAT073005	WAT073005	—	—	—	—
PTFE Septum, 144/pk	WAT072714	WAT072714	WAT072714	—	—	—	—
Self Sealing Septum, 144/pk	WAT022861	WAT022861	WAT022861	—	—	—	—
250 µL Glass Insert	WAT072704	WAT072704	WAT072704	—	—	—	—
250 µL Glass Insert Deactivated	WAT072704DV	WAT072704DV	WAT072704DV	—	—	—	—
250 µL Glass Insert, 144/pk	WAT015199	WAT015199	WAT015199	—	—	—	—
250 µL Glass Insert, Deactivated, 144/pk	WAT015199DV	WAT015199DV	WAT015199DV	—	—	—	—
250 µL Plastic Conical Insert (PMP), 144/pk	WAT072030	WAT072030	WAT072030	—	—	—	—
Springs for LVI, 100/pk	WAT072708	WAT072708	WAT072708	—	—	—	—
250 µL PP Insert, 100/pk	186001729	186001729	186001729	—	—	—	—
Storage Cap							
Black Solid 9 mm Cap with Silicone/PTFE Liner for Sample Storage, 100/pk	186007187	186007187	186007187	—	—	—	—

[1] Item contains 1,000 vials.

Vials Troubleshooting Guide

Problem	Impact	Solution
Septum dislodged during shipment or use	▪ Need to insert septum or need to rerun analysis ▪ Loss of time	▪ Check to see if needle is piercing in center of septa. ▪ Check to see if needle is sharp.
Vacuum forms in vial during sample draw	▪ Sample spill over ▪ Sample draw reproducibility problems	▪ Use pre-slit septa which provides proper venting, eliminating sample spill over and insuring reproducible sample draw volumes.
Sample-limited applications require the use of cumbersome low-volume inserts	▪ Increased labor required for inserting the LVI into the vial leads to delays in sample processing ▪ Increased labor time and difficulty when pipetting into small neck opening of LVI ▪ Additional handling increases chance of contamination ▪ Increased costs from purchasing multiple components: vial, cap and LVI	▪ Use Waters Total Recovery vial and Maximum Recovery vial: – No need to use LVIs. – Wide neck opening for easy sample pipetting. – One less handling step reduces chance of contamination. – Only need one component, saving storage space and costs.
Need to perform multiple injections with minimum residual volume in each vial requires LVI to obtain minimum residual volume, but maximum capacity is only 300 µL	▪ Increased labor to fill additional sample vials ▪ Increased cost to purchase additional sample vials and LVIs	▪ Use Waters Total Recovery vial and Maximum Recovery vial. The increased capacity and low residual volume allows you to perform multiple injections with minimum residual volume in a single vial.
Need to use glass inserts in a 96-well plate format but it requires capping each insert one-at-a-time	▪ Delay in sample processing	▪ The glass inserts in the Waters 96-well format allows for the use of a sealing cap mat, saving time and labor.
Frequent needle damage	▪ Downtime causing missed deadlines ▪ Cost of repairs	▪ All Waters vials have dimensional specifications that eliminate the potential of needle damage.
Laboratory owns HPLC instruments from several different manufacturers	▪ Purchasing several different vials ▪ Increased number of purchase orders ▪ Unable to take advantage of quantity discounts, leading to higher costs	▪ The tight dimensional tolerances on all Waters vials and accessories make them ideal for use with virtually all HPLC systems. ▪ Reduce the number of purchase orders and take advantage of quantity discounts by buying all your sample vials from Waters.
Analyte compounds are sticking to the glass surface of the vial	▪ Loss of sample ▪ Loss of time ▪ Need to run the analysis again	▪ Deactivated glass vials and inserts: Waters uses a gas phase deactivation process that renders the glass surface inert. Unlike other deactivated vials, the surface modification is permanent, resulting in an indefinite shelf life.
Inconsistent quality between laboratory sites	—	▪ Waters vials are distributed world wide from the same source.

Beware of Poor Quality Look-Alike Vials

- Only Waters Alliance Total Recovery vials and Maximum Recovery vials utilize a proprietary manufacturing process, ensuring that the slope of the internal taper will deliver all of the sample to the bottom of the vial.
- The bottom thickness is held to a close tolerance eliminating needle damage caused by bottoming out.

Vial Product Descriptions

Vials for ACQUITY UPLC Systems

Screw Cap 12 x 32 mm Vials for ACQUITY UPLC Systems	
1	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design, (6 mm Opening, 9 mm Cap).
2	Amber 12 x 32, Type 1, 51-Expansion Glass Screw Neck with Quick Thread Design, (6 mm Opening, 9 mm Cap).
3	Waters Maximum Recovery Vial, 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
4	Waters Amber Maximum Recovery Vial, 12 x 32, Type 1, 51-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
5	Polypropylene 12 x 32, 300 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
6	Polypropylene 12 x 32, 750 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
7	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design, (6 mm Opening, 9 mm Septumless Cap).
8	Waters Total Recovery Vial, 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).

Vials for Alliance Systems

Most Commonly Used Vials for Alliance Systems	
9	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
10	Amber 12 x 32, Type 1, 51-Expansion Glass Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
11	Clear Maximum Recovery Vial 12 x 32, Type 1 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
12	Polypropylene 12 x 32, 300 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
13	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck (6 mm Opening, 10 mm Cap).
14	Total Recovery Vial Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
15	Amber Maximum Recovery Vial, 12 x 32, Type 1 51-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
16	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design, (6 mm Opening, 9 mm Septumless Cap).

Screw Cap 12 x 32 mm Vials for Alliance Systems	
17	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
18	Amber 12 x 32, Type 1, 51-Expansion Glass Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
19	Clear Maximum Recovery Vial 12 x 32, Type 1 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
20	Polypropylene 12 x 32, 300 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
21	Polypropylene 12 x 32, 750 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
22	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck (6 mm Opening, 10 mm Cap).
23	Total Recovery Vial Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
24	Amber Maximum Recovery Vial, 12 x 32, Type 1 51-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).

Snap Cap 12 x 32 mm Vials for Alliance Systems	
25	Clear 12 x 32, Type 1, 33-Expansion Glass, Snap Cap Vial (6 mm Opening, 9 mm Cap).
26	Amber 12 x 32, Type 1, 51-Expansion Glass Snap Cap Vial (6 mm Opening, 9 mm Cap).
27	Clear Maximum Recovery Vial 12 x 32, Type 1, 33-Expansion Glass, Snap Cap Vial (6 mm Opening, 9 mm Cap).
28	Polypropylene 12 x 32, 300 µL Snap Cap Vial (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
29	Polypropylene 12 x 32, 750 µL Snap Cap Vial (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
30	Clear 12 x 32, Type 1, 33-Expansion Glass, Crimp Top Vial (6 mm Opening, 12 mm Cap).
31	Amber 12 x 32, Type 1, 51-Expansion Glass, Crimp Top Vial (6 mm Opening, 12 mm Cap).
32	Total Recovery Vial Clear 12 x 32, Type 1, 33-Expansion Glass, Snap Cap Vial (6 mm Opening, 9 mm Cap).

Vials for Waters 717 Autosampler: 15 x 45 mm Vials	
33	Clear 15 x 45, Type 1, 33-Expansion Glass, Screw Neck Vial.
34	Amber 15 x 45, Type 1, 51-Expansion Glass, Screw Neck Vial.
35	Total Recovery Screw Neck Vial Clear Glass 15 x 45, Type 1, 33-Expansion Glass.
36	Polypropylene 15 x 45, 3 mL Round Bottom Screw Neck Vial, 1,000/pk.
37	Polypropylene Snap Cap Vial with Conical Bottom, PE Snap Caps.
38	4 mL Glass Shell Vial with Polyethylene Snap Cap, Type 1, 51-Expansion Glass.
39	4 mL Amber Shell Vial with Polyethylene Snap Cap, Type 1, 51-Expansion Glass.

Vials for Waters 717 Autosampler: 8 x 40 mm Vials	
40	1 mL Clear Glass Shell Vial (8 x 40 mm) Type 1, 51-Expansion Glass with Polyethylene Snap Cap, 250/pk.
41	1 mL Amber Glass Shell Vial (8 x 40 mm) Type 1, 51-Expansion Glass with Polyethylene Snap Cap, Type 1, 250/pk.
42	Total Recovery Clear Glass Vial (8 x 40 mm) with Polyethylene Snap Cap, Type 1, 51-Expansion Glass.
43	650 µL Polypropylene Vial (8 x 40 mm) with Polyethylene Snap Cap.

Vials for Compatible Systems

Vials for Waters 2707 Autosampler	
44	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design, (6 mm Opening, 9 mm Cap).
45	Amber 12 x 32, Type 1, 51-Expansion Glass Screw Neck with Quick Thread Design, (6 mm Opening, 9 mm Cap).
46	Waters Maximum Recovery Vial, 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
47	Waters Amber Maximum Recovery Vial, 12 x 32, Type 1, 51-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
48	Polypropylene 12 x 32, 300 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
49	Clear 22 x 45 mm Type I, 33-Expansion Glass Screw Neck Vial

Screw Cap 12 x 32 mm Vials for Compatible Systems	
50	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
51	Amber 12 x 32, Type 1, 51-Expansion Glass Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
52	Amber Maximum Recovery Vial 12 x 32, Type 1, 51-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
53	Clear Maximum Recovery Vial 12 x 32, Type 1, 33-Expansion Glass, Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap).
54	Qsert Vial Clear Screw Cap Glass Vial, Quick Thread Design with Fused in Glass Insert (6 mm Opening, 9 mm Cap).
55	Qsert Vial Amber Screw Cap Glass Vial, Quick Thread Design with Fused in Glass Insert (6 mm Opening, 9 mm Cap).
56	Polypropylene 12 x 32, 300 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
57	Polypropylene 12 x 32, 750 µL Screw Neck with Quick Thread Design (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
58	Clear 12 x 32, Type 1, 33-Expansion Glass, Screw Neck (6 mm Opening, 10 mm Cap).
59	Polypropylene 12 x 32, 250 µL Screw Neck Vial (6 mm Opening, 8 mm Cap).

Snap and Crimp Cap 12 x 32 mm (9 mm Cap) Vials for Compatible Systems	
60	Clear 12 x 32, Type 1, 33-Expansion Glass, Snap Cap Vial (6 mm Opening, 9 mm Cap).
61	Amber 12 x 32, Type 1, 51-Expansion Glass Snap Cap Vial (6 mm Opening, 9 mm Cap).
62	Maximum Recovery Vial 12 x 32, Type 1, 33-Expansion Glass, Snap Cap Vial (6 mm Opening, 9 mm Cap).
63	Qsert Vial Clear Snap Cap Glass Vial with Fused in Glass Insert (6 mm Opening, 9 mm Cap).
64	Polypropylene 12 x 32, 300 µL Snap Cap Vial (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
65	Polypropylene 12 x 32, 750 µL Snap Cap Vial (6 mm Opening, 9 mm Cap). Reformulate Clean PP Vial.
66	Clear 12 x 32, Type 1, 33-Expansion Glass, Crimp Top Vial (6 mm Opening, 12 mm Cap).
67	Amber 12 x 32, Type 1, 51-Expansion Glass, Crimp Top Vial (6 mm Opening, 12 mm Cap).

15 x 45 mm Vials for Compatible Systems: Vials and Accessories	
68	Clear 15 x 45, Type 1, 33-Expansion Glass, Screw Neck Vial.
69	Amber 15 x 45, Type 1, 51-Expansion Glass, Screw Neck Vial.
70	Waters Total Recovery Screw Neck Vial Clear Glass 15 x 45, Type 1, 33-Expansion Glass.
71	Polypropylene 15 x 45, 3 mL Screw Neck Vial.
72	Polypropylene Snap Cap Vial with Conical Bottom, PE Snap Caps.
73	4 mL Glass Shell Vial with Polyethylene Snap Cap, Type 1, 51-Expansion Glass.
74	4 mL Amber Shell Vial with Polyethylene Snap Cap, Type 1, 51-Expansion Glass.

15 x 45 mm Vials for Compatible Systems: GPC 2000 Vials	
75	4 mL Glass Screw Neck Vial, Type 1, 33-Expansion Glass for GPC 2000.
76	10 mL Screw Neck Glass Vial for GPC 2000.

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