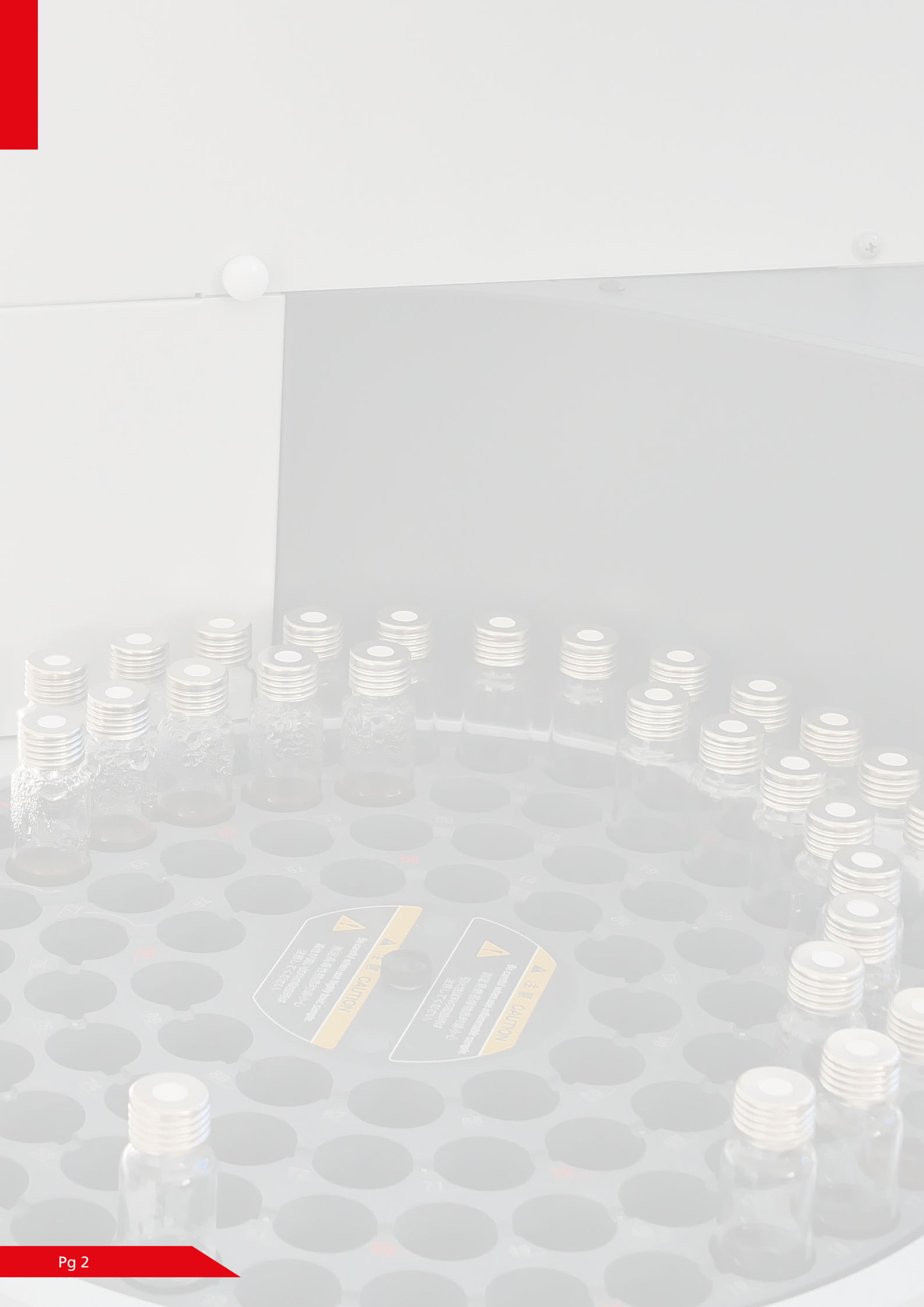


CoreFocus

Vials, caps and accessories

The smart choice in consumables





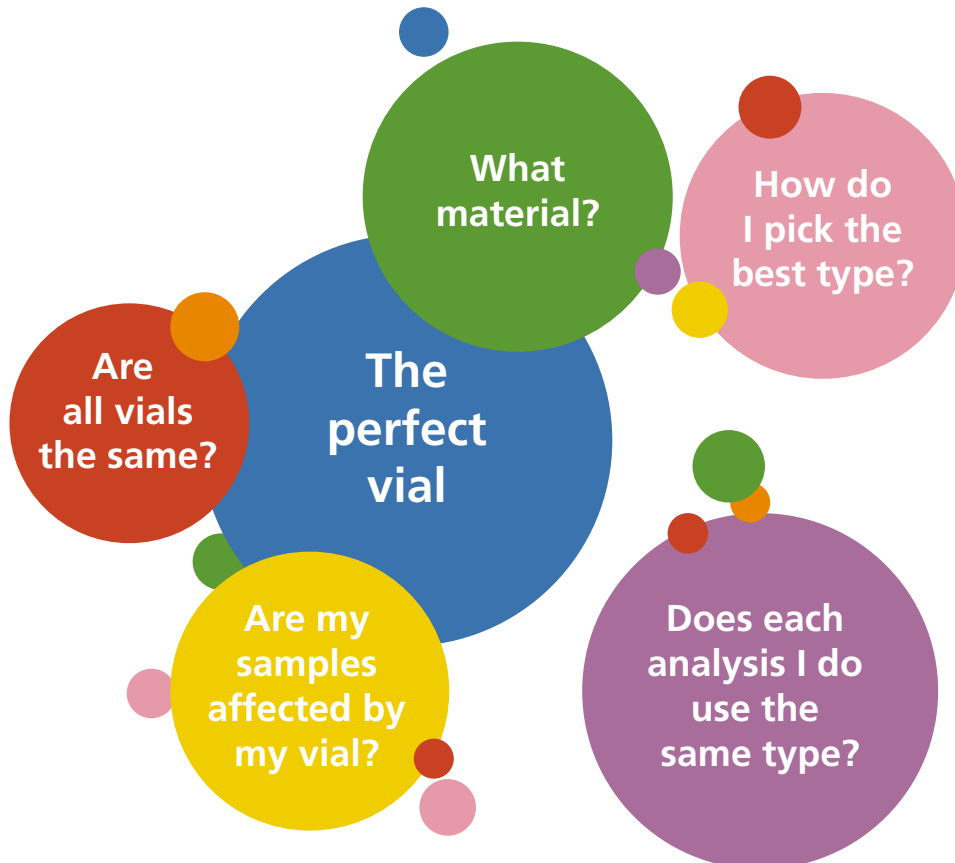
For over 140 years, Shimadzu has continued to be your trusted partner by providing leading-edge analytical instruments. Now, we further support your success through borderless delivery of the high quality consumable products that solve everyday challenges. All this is for the pursuit of our corporate proposition to provide “Excellence in Science” solutions.

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The perfect vial?

Struggling to find the “right” vial? You are not alone!



The main goals when choosing a vial

- Hold the sample without allowing it to adsorb into the container
- Reduce the effects of extractables
- Prevent leaching of materials from the container into the sample

THE KEY IS TO MINIMIZE ADSORPTION AND LEACHABLES

WHAT MAKES VIALS DIFFERENT?

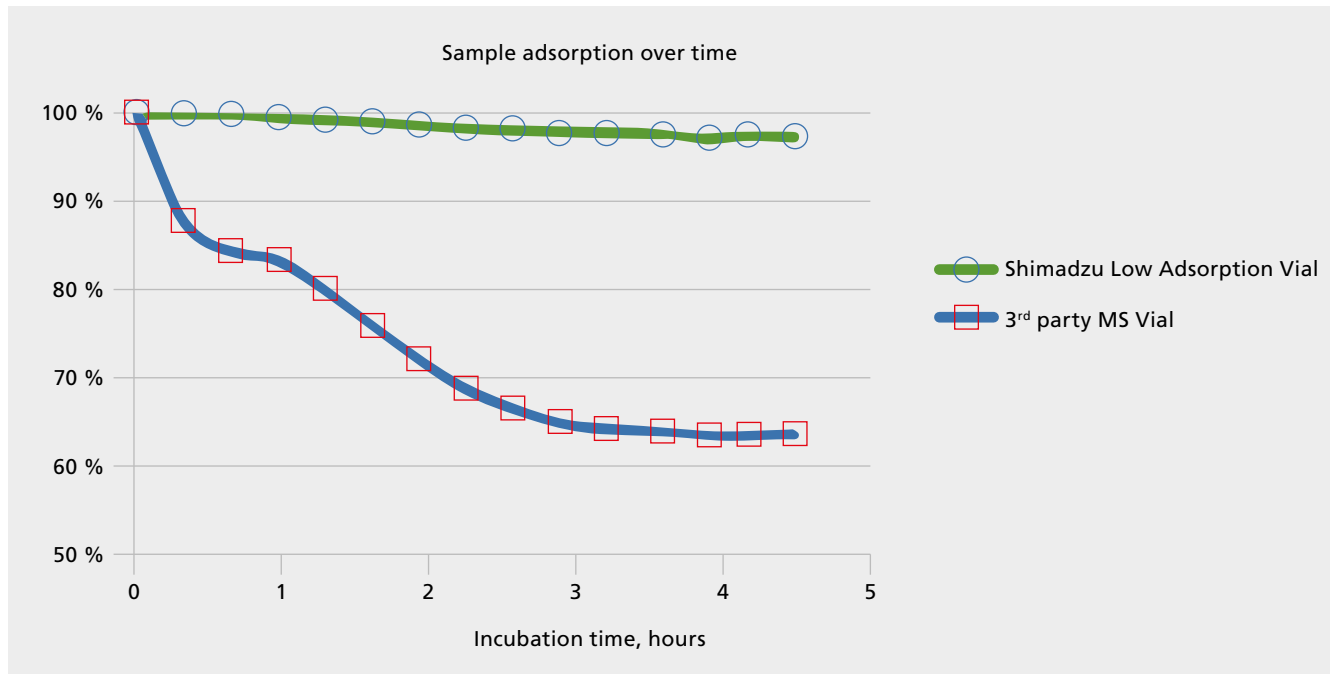
THE GLASS VIAL...

A known fact in the glass industry is that not all glass is the same. Besides the compounds contained in the glass, the manufacturing process can widely change the properties of the final product. Sodium is a common element found in glass and is the major cause of surface adsorption on the glass. All adsorption in borosilicate glass is polar in nature causing sticking and bonding to the glass surfaces. Highly negatively charged hydroxyl sites in the glass matrix yield the perfect binding sites for positively charged compounds to stick to the glass surfaces.

Two manufacturing steps need to occur to produce a Low Adsorption (LA) vial that can be "Mass Spec Certified". Step one is to remove as much of the metals as possible with particular attention to sodium. The sodium as well as other metals can leach out of the glass into the liquid in the vial and chemically bond with certain common solvents. When this leaching occurs, the pH of the solution increases and can cause degradation to pH sensitive analytes.

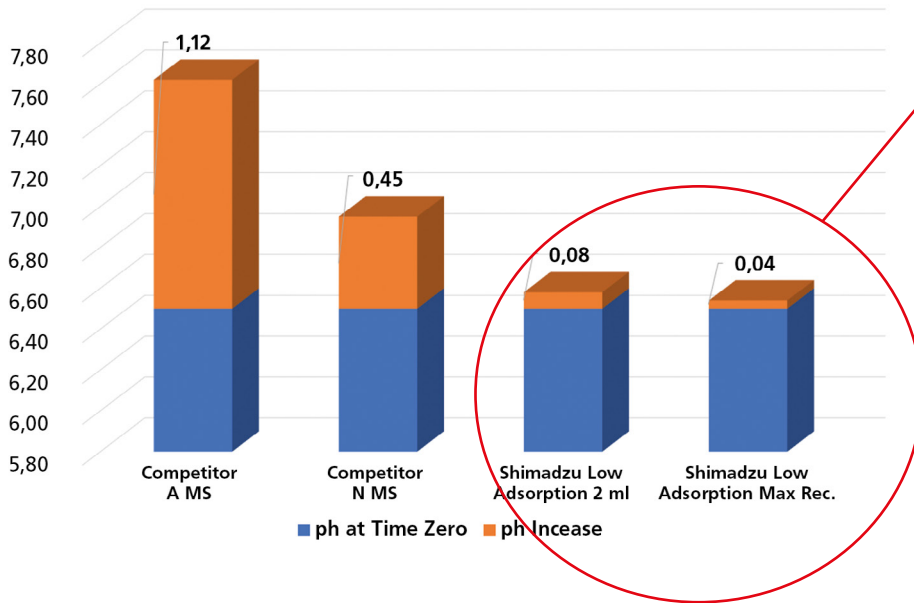
Shimadzu vials have been shown to contain 28 times less sodium than competitor vials which correlates to competitor vials having typical pH increases of up to 2.8 units or more. The second step in the process is to silanize or coat the glass in order to increase hydrophobicity, in order to further reduce the adsorption of analytes.

The diagram below shows the adsorption rate of the highly sticky positive molecule chlorhexidine in the average competitor's MS certified glass vial compared to the Shimadzu Low Adsorption vial. Rapid adsorption occurs within the first two hours with approximately 30 % of the sample adsorbed into the surfaces of the vial. Then, saturation occurs within four hours of contact with the vial causing nearly 40 % sample loss just by choosing the wrong glass vial.



Sample adsorption of Chlorhexidine over time

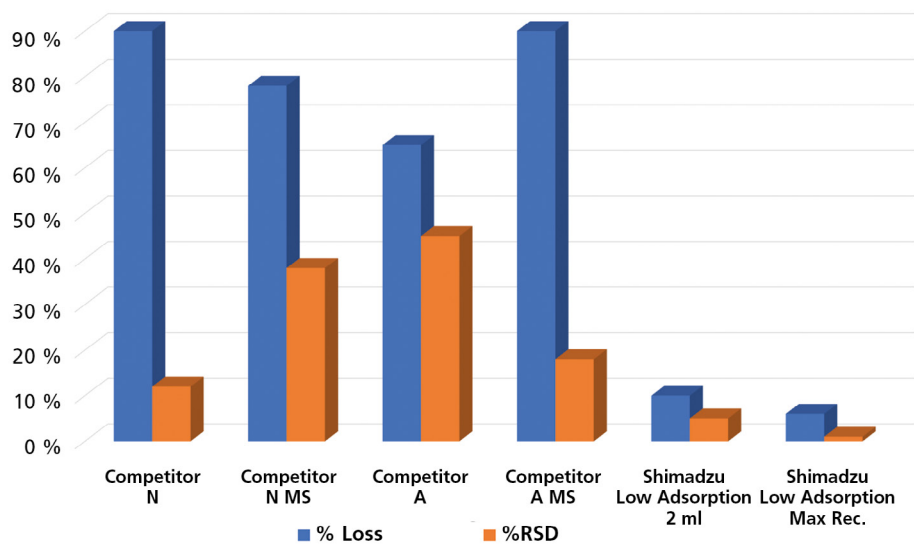
WHAT MAKES VIALS DIFFERENT?



28x less sodium compared to competitor's vials

Less metals like sodium means that you have less leaching into your sample and less pH increase. Changes in pH cause degradation for pH sensitive compounds.

pH shift in different vials



In the Low Adsorption vials, less than 10 % analyte loss was observed and it was highly reproducible as seen by the single digit %RSD's.

Competitor MS certified vials show no less than 60 % sample loss via adsorption into the glassware. Consistency from vial to vial is also highly variable as shown by the inconsistent %RSD's.

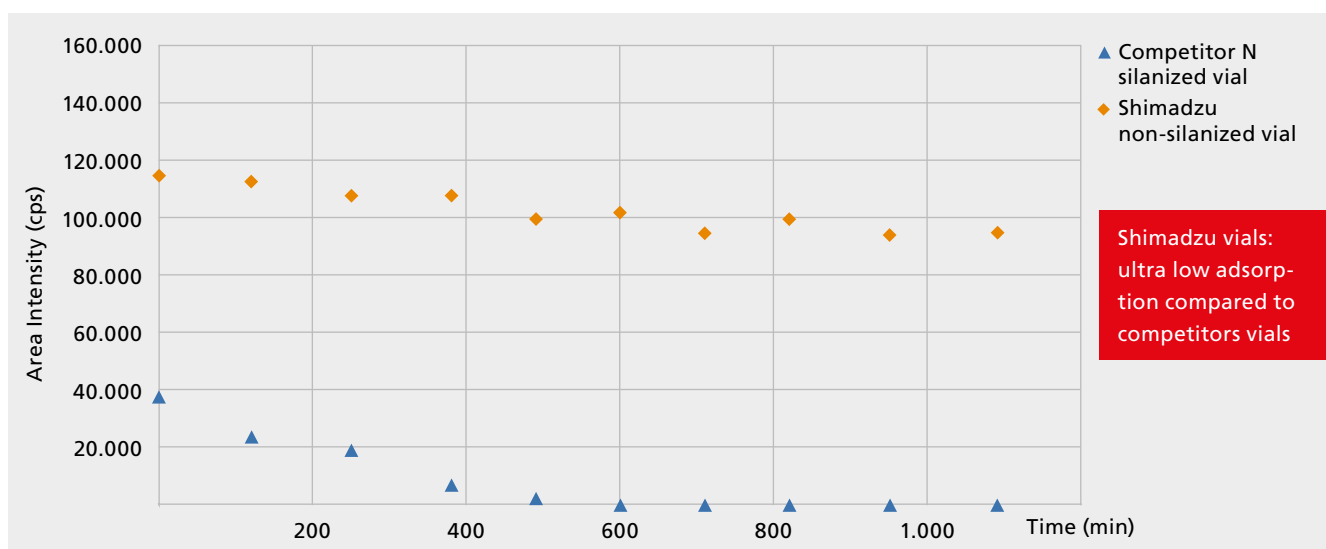
Percent adsorption

SILANIZED VS NON-SILANIZED

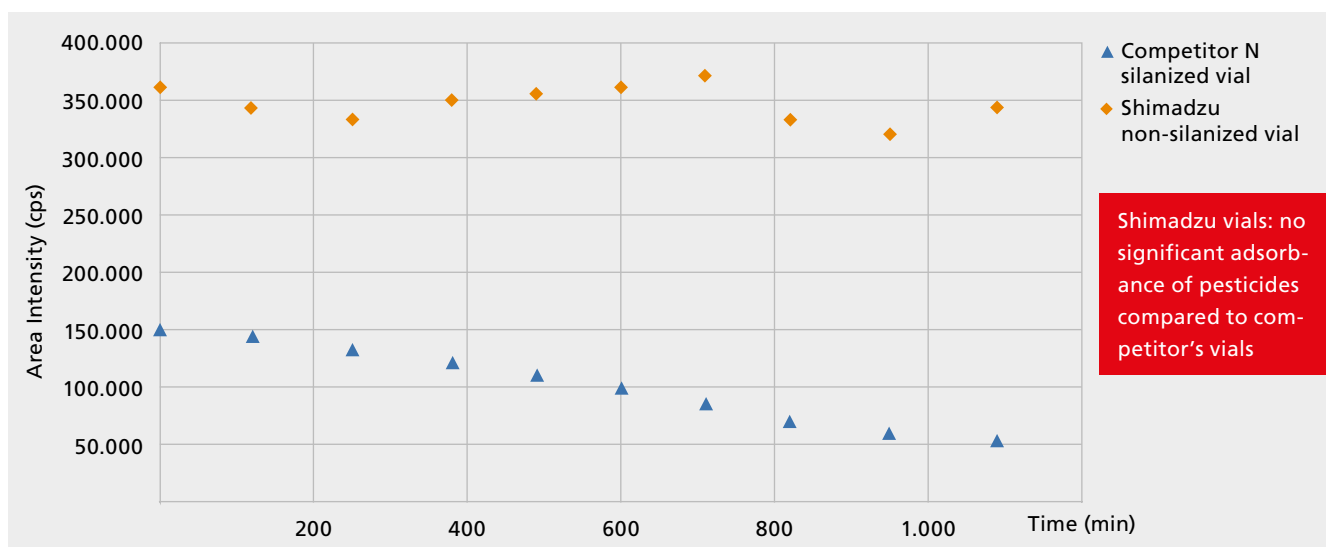
ARE SHIMADZU NON-SILANIZED VIALS BETTER THAN COMPETITORS' SILANIZED VIALS?

Some applications require the use of silanized vials while other applications do not. Silanized glassware is not perfectly inert but it does offer an exceptional coating when needed. When conducting analyses that require non-silanized glassware and where plastics are not appropriate, how does the Shimadzu non-silanized vial compare to competitors silanized vials? The Shimadzu non-silanized vial exhibits ultra low adsorption characteristic as compared to competitors vials because they are manufactured using identical material to the Low Adsorption silanized vial except for the coating. Below is a comparison of the Shimadzu non-silanized vial to competitors silanized vials.

Compounds with a wide range of polarity and functional groups were studied to determine if silanized vials adsorbed less analytes than non-silanized vials. A comparison between a Shimadzu non-silanized vial and a competitor's silanized vial was performed using a 105 multi-residue pesticide mixture in a 95 % aqueous tap water solution with sodium ascorbate to remove chlorine found in the tap water. The results showed that the pesticides were not significantly adsorbed into the Shimadzu vial but the competitor's vial showed significant adsorption of pesticides into the vial surfaces.



Probenazole



Iprodione

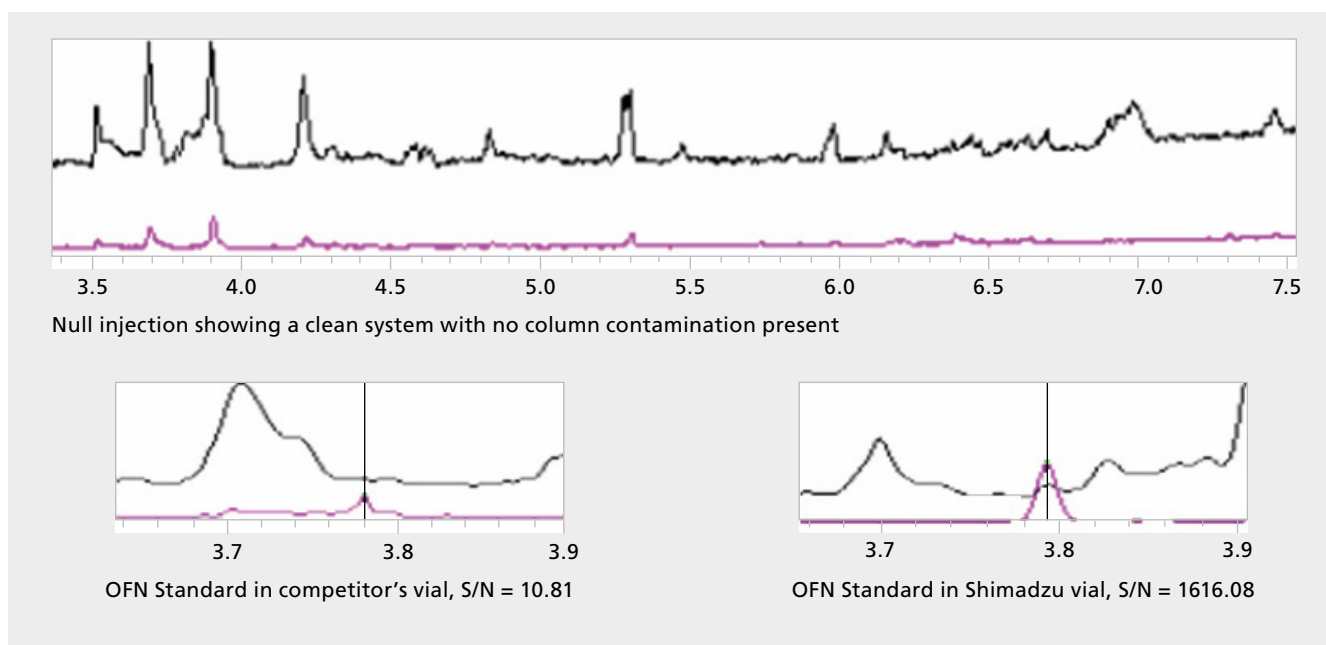
SEAL THE VIAL

DOES THE SEPTUM REALLY MATTER?

Shimadzu often experiences that every application is different, therefore multiple sealing options exist. For vials, different types of septum material are available. Modern septum are manufactured using a double layer design with the top layer for sealing and the bottom layer for sample protection.

The most common septum is one consisting of a silicone top layer and a PTFE bottom layer. Many applications utilize the PTFE version – but if an application is sensitive to PTFE expo-

sure, then a different material such as full-body polypropylene cap is recommended. Not all PTFE or polypropylene material is the same as evidenced by the data below. A comparison of the Shimadzu septum versus the typical competitor's septum was conducted to see what leachables or bleed existed. Bleed most often occurs by lab practices such as leaning the vial or vortexing the vial so that sample liquid touches the septum and the solvent extracts material from the septum.



Benefit of pre-slit Septum

Septum can be pre-slit or not and must be selected by evaluating a few method criteria.

- A pre-slit septum is ideal in applications requiring drawing 20 % or more of the sample volume from the vial so that vacuum in the vial is avoided. The slit allows ambient gas to equalize the gas in the vial so that a vacuum is not created in the vial from the tight seal around the needle.
- If coring/clogging from a narrow needle or needle deflection from highly durable septum material is a concern, then choosing a pre-slit septum is ideal.
- The non pre-slit septum helps to reduce carryover from vial to vial because the resealing characteristics of the septum act as a squeegee to wipe solution from the outside of the needle. Typically, a non-slit septum exhibits resealing capabilities for a limited number of needle punctures but for long-term storage in the vial, using a new non-punctured septum is best practice.

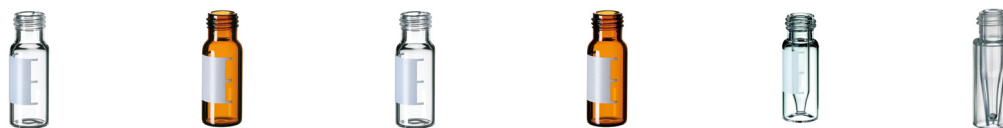
1 1.5 ML STANDARD VIALS FOR LC/LC-MS AND GC/GC-MS

1.1 SCREW NECK 9 MM

■ Glass vials 1.5 ml, screw neck, 100 pcs. / pack

Wide opening vials

This product is designed so that the corners of the bottom of the vial interior can be easily reached e.g. by inserting a 100 µl micropipette tip. This increases the ease of use when inserting and retrieving samples.



Part number	961-10020-25	961-10020-01	961-10020-02	961-10020-03	961-10020-20	961-10020-14
Volume [ml]	1.5	1.5	1.5	1.5	0.2	0.2
Material, colour	glass, clear	glass, amber	glass, clear silanized	glass, clear silanized	glass, clear, glass micro-insert	TPX, clear glass micro-insert
Neck	short thread, wide opening	short thread, wide opening	short thread, wide opening	short thread, wide opening	screw neck	short thread
Head OD-ø [mm]	9	9	9	9	9	9
Bottom	flat	flat	flat	flat	bottom bonded	./.
Dimensions [mm]	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6
Marking	label and filling lines	label and filling lines	label and filling lines	label and filling lines	label and filling lines	./.

■ Plastic vials 1.5 ml, screw neck, 100 pcs. / pack



Part number	961-10020-16	961-10020-18	961-10020-15	961-10020-17	961-10020-19
Volume [ml]	1.5	1.5	0.3	0.3	0.7
Material, colour	plastic, clear	plastic, amber	plastic, clear micro-insert	plastic, amber micro-insert	plastic, clear micro-insert
Neck	short thread	short thread	short thread	short thread	short thread
Head OD-ø [mm]	9	9	9	9	9
Bottom	concave	concave	./.	./.	flat
Dimensions [mm]	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6
Marking	filling lines	filling lines	./.	./.	./.

■ **Micro Inserts, 100 pcs. / pack**
For short thread vials with wide opening



Part number	961-10020-28	961-10020-26	961-10020-27
Volume [ml]	0.1	0.1	0.1
Material, colour	glass, clear	glass, clear silanized	glass, clear
Bottom	assembled plastic spring	assembled plastic spring	./.
Dimensions [mm]	29.0 x 5.7	29.0 x 5.7	31.0 x 6.0

■ **Screw caps with septum, 100 pcs. / pack**

- 1,2,4) Commonly recommended for usage with robotic arms
- 3) Recommended for magnetic robotic arms
- 4) Septum with slit to avoid vacuum in the vial in case of multiple injections
- 5) Penetration cap












		Cap				Septum			
Picture	Part number	Color	Material	Hole [mm]	Thread [mm]	Color	Material	Thickness [mm]	Shore A
1	961-10030-23	red	PP, short thread	6	9	white / red	silicone / PTFE UltraClean	1.0	55°
2	961-10030-05	red	PP, short thread	6	9	red / beige	rubber / PTFE	1.0	45°
3	961-10030-13	gold	magnetic, short thread	6	9	white / red	silicone / PTFE UltraClean	1.0	55°
4	961-10030-14	red	PP, short thread	6	9	white / blue	silicone / PTFE with slit	1.0	55°
5	961-10030-18	transparent	PP, short thread	./.	9	One component closure – no bleeding; absolutely inert; pierceable like a septum; tight like a septum			
6	961-10030-06	red	PP, short thread	6	9	red / white / red	PTFE / silicone / PTFE	1.0	45°





■ **Kits, 100 pcs. / pack**

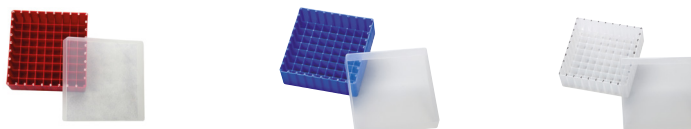
Including 1.5 ml glass vials with screw neck, cap and septum

Kit Part number	Vial (vial P/N)		Cap / Septum (cap+septum P/N)	
961-10010-06	1.5 ml glass, clear with label and filling lines; 9 mm short thread; wide opening; 32.0 x 11.6 mm 961-10020-25		red PP-cap 6.0 mm centre hole; silicone white/PTFE red; UltraClean; 1.0 mm thick; 55° shore A 961-10030-23	
961-10010-13			red PP-cap 6.0 mm centre hole; silicone Rubber red/PTFE beige, 1.0 mm thick; 45° shore A 961-10030-05	
961-10010-01	1.5 ml glass, amber with label and filling lines; 9 mm short thread; wide opening; 32.0 x 11.6 mm 961-10020-01		red PP-cap 6.0 mm centre hole; silicone white/PTFE red; UltraClean; 1.0 mm thick; 55° shore A 961-10030-23	
961-10010-14			red PP-cap 6.0 mm centre hole; silicone rubber red/PTFE beige, 1.0 mm thick; 45° shore A 961-10030-05	
961-10010-02	1.5 ml silanized glass, clear with label and filling lines; 9 mm short thread; wide opening; 32.0 x 11.6 mm 961-10020-02		red PP-cap 6.0 mm centre hole; silicone white/PTFE red; UltraClean; 1.0 mm thick; 55° shore A 961-10030-23	
961-10010-03	1.5 ml silanized glass, amber with label and filling lines; 9 mm short thread; wide opening; 32.0 x 11.6 mm 961-10020-03			

Additional accessories

■ **Storage boxes for 1.5 ml vials, 1 pc. / pack**

Alphanumeric coding at all 4 margins and at the bottom of the cavities



Part number	961-10050-09	961-10050-07	961-10050-08
Material, colour	PP, red	PP, blue	PP, transparent
For vials [ml]	1.5	1.5	1.5
Capacity [pcs]	81	81	81
Dimensions [mm]	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45

See the full range of accessories on page 30

1.2 CRIMP NECK 11 MM

■ Glass vials, crimp neck, 100 pcs. / pack



Part number	961-10020-23	961-10020-24	961-10020-22
Volume [ml]	1.5	1.5	0.2
Material, colour	glass, clear	glass, amber	glass, clear micro insert
Neck	crimp, wide opening	crimp, wide opening	crimp, wide opening
Head OD-ø [mm]	11	11	11
Bottom	flat	flat	bottom bonded
Dimensions [mm]	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6
Marking	label and filling lines	label and filling lines	label and filling lines

■ Micro Inserts, 100 pcs. / pack

For short thread vials with wide opening



Part number	961-10020-28	961-10020-26	961-10020-27
Volume [ml]	0.1	0.1	0.1
Material, colour	glass, clear	glass, clear silanized	glass, clear
Bottom	assembled plastic spring	assembled plastic spring	./.
Dimensions [mm]	29.0 x 5.7	29.0 x 5.7	31.0 x 6.0

■ Crimp caps with septum, 100 pcs. / pack

- 1,2) Much cleaner than natural rubber
- 2) Cross-slit as penetration aid and for minimizing coring
- 3) Softer alternative to natural rubber/TEF



		Cap				Septum			
Picture	Part number	Color	Material	Hole [mm]	Thread [mm]	Color	Material	Thickness [mm]	Shore A
1	961-10030-11	silver	aluminium, lacquered	5.5	11	white / red	silicone / PTFE UltraClean	1.3	45°
2	961-10030-12	silver	aluminium, lacquered	5.5	11	white / blue	silicone / TEF with cross-slit	1.5	55°
3	961-10030-10	silver	aluminium, lacquered	5.5	11	red / beige	rubber / PTFE	1.0	45°
4	961-10030-09	silver	aluminium, lacquered	5.5	11	orange / transparent	natural rubber / TEF	1.0	60°



■ **Kits, 100 pcs. / pack**

Including 1.5 ml glass vials with crimp neck, cap and septum

Kit Part number	Vial (vial P/N)	Cap / Septum (cap+septum P/N)
961-10010-15	1.5 ml glass, clear with label and filling lines; 11 mm crimp; wide opening; 32.0 x 11.6 mm 961-10020-23	alu cap 5.5 mm centre hole; silicone white/PTFE red; UltraClean; 1.3 mm thick; 45° shore A 961-10030-11
961-10010-17		alu cap 5.5 mm centre hole; silicone white/PTFE blue with cross-slit; 1.5 mm thick; 55° shore A 961-10030-12
961-10010-19		alu cap 5.5 mm centre hole; rubber red/PTFE beige; 1.0 mm thick; 45° shore A 961-10030-10
961-10010-21		alu cap 5.5 mm centre hole; natural rubber orange/TEF transparent; 1.0 mm thick; 60° shore A 961-10030-09
961-10010-16	1.5 ml glass, amber with label and filling lines; 11 mm crimp; wide opening; 32.0 x 11.6 mm 961-10020-24	alu cap 5.5 mm centre hole; silicone white/PTFE red; UltraClean; 1.3 mm thick; 45° shore A 961-10030-11
961-10010-18		alu cap 5.5 mm centre hole; silicone white/PTFE blue with cross-slit; 1.5 mm thick; 55° shore A 961-10030-12
961-10010-20		alu cap 5.5 mm centre hole; rubber red/PTFE beige; 1.0 mm thick; 45° shore A 961-10030-10
961-10010-22		alu cap 5.5 mm centre hole; natural rubber orange/TEF transparent; 1.0 mm thick; 60° shore A 961-10030-09

Additional accessories

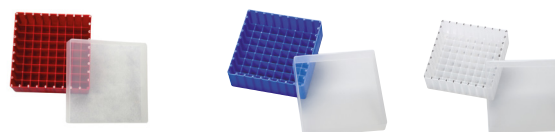
■ **Crimper / Decapper**



Part Number	Description
961-10050-02	11 mm crimper
961-10050-04	11 mm decapper

■ **Storage boxes for 1.5 ml vials, 1 pc. / pack**

Alphanumeric coding at all 4 margins and at the bottom of the cavities



Part number	961-10050-09	961-10050-07	961-10050-08
Material, colour	PP, red	PP, blue	PP, transparent
For vials [ml]	1.5	1.5	1.5
Capacity [pcs]	81	81	81
Dimensions [mm]	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45

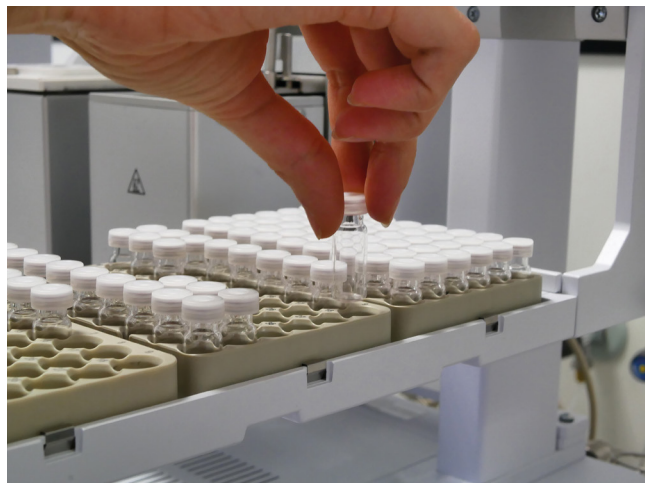
See the full range of accessories on page 30

1.3 SNAP RING 11 MM

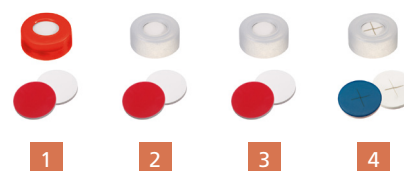
- Glass vials, snap ring, 100 pcs. / pack



Part number	961-10020-32
Volume [ml]	1.5
Material, colour	glass, clear
Neck	snap, wide opening
Head OD-ø [mm]	11
Bottom	flat
Dimensions [mm]	32.0 x 11.6
Marking	label and filling lines



- Snap caps with septum, 100 pcs. / pack



		Cap				Septum			
Picture	Part number	Color	Material	Hole [mm]	Thread [mm]	Color	Material	Thickness [mm]	Shore A
1	961-10030-26	red	PE, hard	6	11	white / red	silicone / PTFE UltraClean	1.3	45°
2	961-10030-27	transparent	PE, hard	6	11	white / red	silicone / PTFE UltraClean	1.3	45°
3	961-10030-28	transparent	PE, soft	6	11	white / red	silicone / PTFE UltraClean	1.3	45°
4	961-10030-30	transparent	PE, soft	6	11	white / blue	silicone / PTFE cross-slit	1.0	55°

2 CERTIFIED VIALS FOR GCMS & LCMS

■ Features

- Reduced adsorption of basic substances
- Wide opening vial with preset cap and septum
- Certified quality

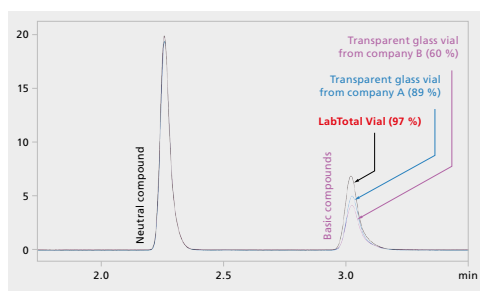
ARE YOU LOSING PRECIOUS SAMPLE BECAUSE OF YOUR VIALS?

Adsorption of vials affects the accuracy of your analysis results. Some sample vials have low adsorption, but the results show low reproducibility. Other sample vials suffer from poor recovery rates.



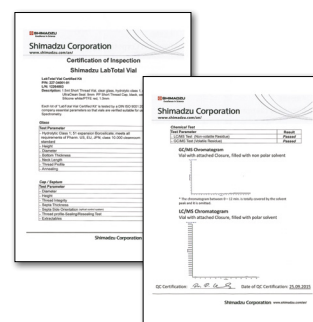
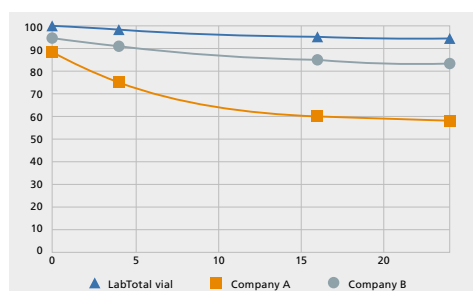
REDUCED ADSORPTION OF BASIC SUBSTANCES

Adsorption of basic substances, a drawback of glass vials, has been reduced as much as possible. As a result, stable recovery rates can be obtained with no changes over time.



MASS SPEC QUALITY CERTIFICATE PROVIDED

This confirms that there was an absence of elution components from the vial in random inspections using LC-MS and GC-MS. Therefore, this product can be used with confidence, with no concern for ghost peaks originating from the vial.



■ Kits, 100 pcs. / pack

Including 1.5 ml glass vials with screw neck, cap and septum

Kit Part number	Vial (vial P/N)	Cap / Septum (cap+septum P/N)
227-34001-01	Certified LC-MS vial 1.5 ml glass, clear; 9 mm screw neck wide opening; with label; 32.0 x 11.6 mm	black plastic cap with centre hole; silicone white/PTFE red; 55° shore A; 1 mm thickness; UltraClean
227-34002-01	Certified GC-MS vial 1.5 ml glass, clear; 9 mm screw neck wide opening; with label and filling lines; 33.8 x 11.6 mm	white ultra-high-performance-grade plastic cap with centre hole; silicone dark blue-translucent / PTFE natural; 35° shore A; 1 mm thickness

3 TORAST-H LOW ADSORPTION VIALS

■ Features

- Low adsorption glass vial that is suitable for long-term storage
- Minimized adsorption of bases, acids and neutrals
- Superior quality control



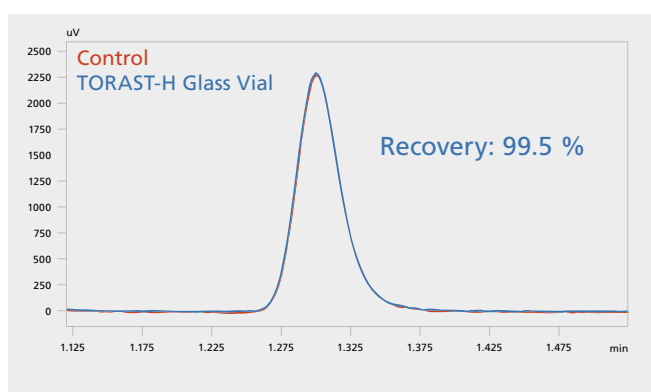
TORAST-H GLASS TECHNOLOGY ELIMINATES THE RISK OF ADSORPTION TO THE GLASS SURFACE OF THE VIALS

Glass, the material of vials, contains metal oxides. Oxides of metals have a high ionizing tendency to be Si-O-M (metal silanolate), which may cause ionic adsorption with basic compounds in the sample. TORAST-H Glass Technology uses special processing to remove metals from the glass and suppress adsorption of basic compounds.

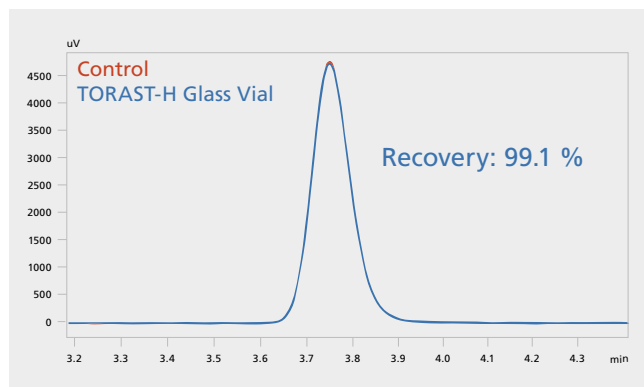


MINIMIZED ADSORPTION OF BASES, ACIDS AND NEUTRALS

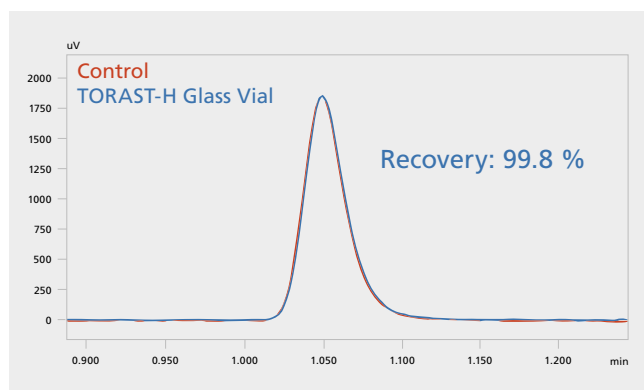
In general, giving a positive charge to the glass surface suppresses the adsorption of basic compounds, but conversely, it causes the adsorption of the acidic compounds. TORAST-H glass vials minimize adsorption of both types of compounds.



Benzoic Acid (Acid Compound)



Amitriptyline (Basic Compound)

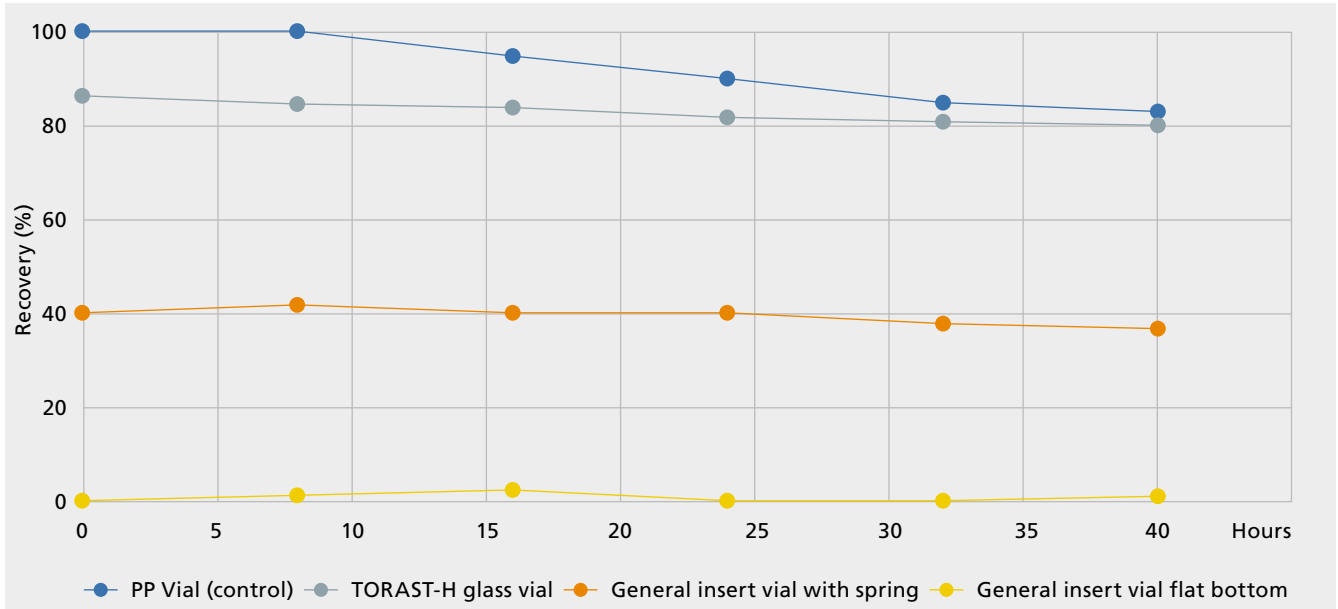


Benzyl Alcohol (Neutral Compound)

LOW ADSORPTION FOR LONG-TERM STORAGE

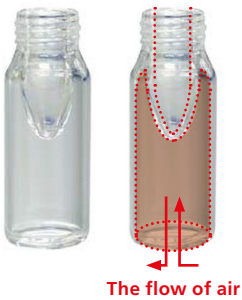
When a sample is stored in a general vial for a long time, the sample may adsorb into the surface of the vial, causing the reproducibility to be poor. The TORAST-H Glass Vials contain

low adsorption characteristics that makes them excellent for long term sample storage.



Basic compound A (log P 4.5, pKa 10.5)

THE SMALL VOLUME VIALS

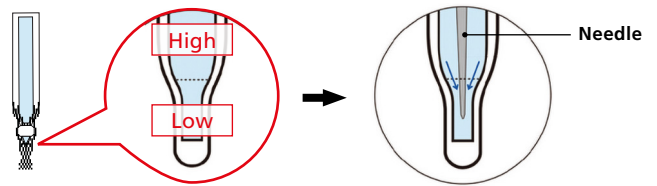


This design ensures that the sample solution contact area is minimized.

The bottom of the vial is concave to improve thermal conductivity.

Small-volume vials have a large contact area; therefore, the rate of loss due to adsorption is greater than with a standard vial. TORAST-H Glass Vials shows dramatically less adsorption compared to other small-volume glass vials.

Insert vials (small capacity) may produce concentration gradients at the top and bottom due to sample adsorption, causing variation over time.



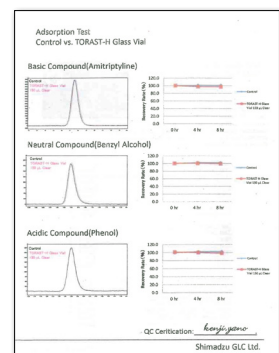
The lower sample has a large contact area with the insert vial and may have a lower concentration due to adsorption on the glass surface.

Sampling increases temporarily the recovery rate because the upper sample flows into the lower part.

SUPERIOR QUALITY CONTROL

- Hydrolytic class 1, 5.1 expansion borosilicate glass
- Comes with quality certificates for lot management
- Shape inspection of vials, septum and caps
- Low adsorption performance testing for basic, acidic and neutral compounds

Item	Result
Visual	Pass
Leak Test	Pass
Dimension	Pass
Weight	Pass
Volume	Pass
Surface	Pass
Septum	Pass
Cap	Pass
Cap - Bottom	Pass
Cap - Diameter	Pass
Cap - Height	Pass
Cap - Thickness	Pass
Cap - Volume	Pass
Cap - Weight	Pass
Cap - Surface	Pass
Cap - Septum	Pass
Cap - Septum Thickness	Pass
Cap - Septum Volume	Pass
Cap - Septum Weight	Pass
Cap - Septum Surface	Pass



3.1 TORAST-H SCREW NECK 9 MM

- Kits, glass vials 1.5 ml, screw neck, 100 pcs. / pack



Part number	370-04300-02	370-04300-04	370-04300-01	370-04300-03
Volume [ml]	1.5	1.5	1.5	1.5
Septum	silicone/PTFE, slit	silicone/PTFE, slit	silicone/PTFE, non-slit	silicone/PTFE, non-slit
Material, colour	glass, clear	glass, amber	glass, clear	glass, amber
Neck	screw neck, wide opening	screw neck, wide opening	screw neck, wide opening	screw neck, wide opening
Head OD-ø [mm]	9	9	9	9
Dimensions [mm]	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6
Marking	label and filling lines	label and filling lines	label and filling lines	label and filling lines

- Kits, glass vials with micro-insert 0.15 ml, screw neck, 100 pcs. / pack



Part number	370-04301-02	370-04301-04	370-04301-01	370-04301-03
Volume [ml]	0.15	0.15	0.15	0.15
Septum	silicone/PTFE, slit	silicone/PTFE, slit	silicone/PTFE, non-slit	silicone/PTFE, non-slit
Material, colour	glass, clear	glass, amber	glass, clear	glass, amber
Neck	screw neck, wide opening	screw neck, wide opening	screw neck, wide opening	screw neck, wide opening
Head OD-ø [mm]	9	9	9	9
Bottom	open	open	open	open
Dimensions [mm]	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6	32.0 x 11.6
Marking	label and filling lines	label and filling lines	label and filling lines	label and filling lines

3.2 TORAST-H BIO VIAL, plastic, with micro-insert 0.3 ml, screw neck, 100 pcs. / pack

■ Features

- Prevents the adsorption of organic compounds
- Reduces the adsorptive loss of the precious sample
- Ideal for peptide and basic compounds analysis

Part number	370-04350-00
Volume [ml]	0.3
Septum	penetration cap
Material, colour	PP, clear
Neck	snap
Bottom	open
Dimensions [mm]	32.0 x 11.6
Marking	./.



- Inert Polypropylene vials to prevent sample adsorption
- TORAST-H Bio vials have a special coating which inhibits the adsorption of peptide and basic compounds to the vial
- Design for convenient use and 32 x 11.6 mm standard dimension for compatibility on all instrument auto-samplers

4 4.0 ML STANDARD VIALS

4.1 SCREW NECK 13 MM

- Glass vials 4.0 ml, screw neck, 100 pcs. / pack



Part number	961-10020-04	961-10020-05
Volume [ml]	4.0	4.0
Material, colour	glass, clear	glass, amber
Neck	screw neck	screw neck
Head OD-ø [mm]	13	13
Bottom	flat	flat
Dimensions [mm]	45.0 x 14.7	45.0 x 14.7
Marking	label and filling lines	label and filling lines

- Screw caps with septum, 100 pcs. / pack



		Cap				Septum			
Picture	Part number	Color	Material	Hole [mm]	Thread [mm]	Color	Material	Thickness [mm]	Shore A
1	961-10030-01	black	plastic	8.5	13	cream / red	silicone / PTFE	1.5	55°
2	961-10030-02	black	plastic	.	13	cream / red	silicone / PTFE	1.5	55°
3	961-10030-07	black	plastic	8.5	13	white / blue	silicone / PTFE, with cross-slit	1.5	55°

- Kits, 100 pcs. / pack

Including 4.0 ml glass vials with screw neck, cap and septum



Kit Part number	Vial (vial P/N)	Cap / Septum (cap+septum P/N)
961-10010-05	4.0 ml glass, clear with label and filling lines; 13 mm screw thread; 45.0 x 14.7 mm 961-10020-04	black PP-cap 8.5 mm centre hole; silicone cream/PTFE red; 1.5 mm thick; 55° shore A 961-10030-01
961-10010-04	4.0 ml glass, amber with label and filling lines; 13 mm screw thread; 45.0 x 14.7 mm 961-10020-05	black PP-cap 8.5 mm centre hole; silicone cream/PTFE red; 1.5 mm thick; 55° shore A 961-10030-01
228-31537-91	4.0 ml PP, clear; 13 mm screw thread; 45.0 x 14.7 mm	white PP-cap; centre hole; silicone transparent/rubber beige

5 HEADSPACE VIALS

5.1 SCREW NECK 18 MM

- Glass vials 10 ml and 20 ml, screw neck, 100 pcs. / pack



Part number	961-10020-06	961-10020-07
Volume [ml]	10	20
Material, colour	glass, clear	glass, clear
Neck	precision thread	precision thread
Head OD-ø [mm]	18	18
Bottom	round	round
Dimensions [mm]	46.0 x 22.5	75.5 x 22.5

- Screw caps with septum, 100 pcs. / pack



		Cap				Septum			
Picture	Part number	Color	Material	Hole [mm]	Thread [mm]	Color	Material	Thickness [mm]	Shore A
1	961-10030-03	silver	magnetic	8	18	blue transparent / white	silicone / PTFE UltraClean	1.3	45°
2	961-10030-19	silver	magnetic	8	18	white / blue	silicone / PTFE UltraClean	1.5	55°
3*	961-10030-20	silver	magnetic	8	18	white / blue	silicone / PTFE	2.0 / 1.5	55°

* Cap for SPME applications, 2 mm septum thickness at the crimp border; thinned penetration area in the centre for easy penetration and excellent resealing



■ **Kits, 100 pcs. / pack**

Including 20 ml glass vials with screw neck, cap and septum



Kit Part number	Vial (vial P/N)		Cap / Septum (cap+septum P/N)
961-10010-08	20 ml glass, clear; 18 mm precision screw thread; round bottom; 75.50 x 22.5 mm 961-10020-07		magnetic cap 8 mm centre hole; silicone blue transparent/PTFE white; UltraClean; 1.3 mm thick; 45° shore A 961-10030-03
961-10010-27			magnetic cap 8 mm centre hole; silicone white / PTFE blue; UltraClean; 1.5 mm thick; 55° shore A 961-10030-19

■ **Kits, 100 pcs. / pack**

Including 10 ml glass vials with screw neck, cap and septum

Kit Part number	Vial (vial P/N)		Cap / Septum (cap+septum P/N)
961-10010-07	10 ml glass, clear; 18 mm precision screw thread; round bottom; 46.0 x 22.5 mm 961-10020-06		magnetic cap 8 mm centre hole; silicone blue transparent/PTFE white; UltraClean; 1.3 mm thick; 45° shore A 961-10030-03
961-10010-10			magnetic cap 8 mm centre hole; silicone white / PTFE blue; UltraClean; 1.5 mm thick; 55° shore A 961-10030-19



5.2 CRIMP NECK 20 MM

- Glass vials 10 ml and 20 ml, crimp neck, 100 pcs. / pack



Part number	961-10020-10	961-10020-11
Volume [ml]	10	20
Material, colour	glass, clear	glass, clear
Neck	crimp	crimp, long neck
Head OD-ø [mm]	20	20
Bottom	round	round
Dimensions [mm]	46.0 x 22.5	75.5 x 22.5

- Crimp caps with septum, 100 pcs. / pack

4) High temperature, high quality Silicone/ PTFE septum for less extractables at low to mid-high temperatures; Operation up to 300°C possible; Low bleeding level at high temperatures (>120°C)

2,3,6,7) Cap is PTFE laminated







		Cap				Septum			
Picture	Part number	Color	Material	Hole [mm]	Thread [mm]	Color	Material	Thickness [mm]	Shore A
1	961-10030-04	silver	aluminium, plain	10	20	white / beige	silicone / PTFE UltraClean	3.2	45°
2	961-10030-08	silver / red	bi-metal, magnetic	8	20	blue transparent / transparent	silicone / PTFE UltraClean	3.0	45°
3	961-10030-15	gold	magnetic	8	20	blue transparent / transparent	silicone / PTFE UltraClean	3.0	45°
4	961-10030-16	silver	steel	5	20	dark red / transparent	ultra high temperature silicone / PTFE UltraClean	3.0	45°
5	961-10030-17	gold	magnetic	8	20	white / beige	silicone / PTFE	3.2	45°
6	961-10030-21	gold	magnetic	8	20	grey / grey	bromo-butyl / PTFE	3.0	50°
7	961-10030-22	silver	aluminium, plain	10	20	blue transparent / white	silicone / PTFE UltraClean	3.0	45°

■ **Kits, 100 pcs. / pack**





Including 20 ml glass vials with crimp neck, cap and septum



Kit Part number	Vial (vial P/N)	Cap / Septum (cap+septum P/N)
961-10010-12	 20 ml glass, clear; 20 mm crimp neck; round bottom; 75.5 x 22.5 mm 961-10020-11	alu cap 10 mm centre hole; silicone white/PTFE beige; 3.2 mm thick; 45° shore A 961-10030-04 
961-10010-29		plain aluminium cap 10 mm centre hole; silicone blue transparent/ PTFE white; UltraClean; 3.0 mm thick; 45° shore A 961-10030-22 
961-10010-31		magnetic bi-metal cap 8 mm centre hole; silicone blue /PTFE transparent; UltraClean; 3.0 mm thick; 45° shore A 961-10030-08 

■ **Kits, 100 pcs. / pack**

Including 10 ml glass vials with crimp neck, cap and septum

Kit Part number	Vial (vial P/N)	Cap / Septum (cap+septum P/N)
961-10010-11	 10 ml glass, clear; 20 mm crimp neck; round bottom; 46.0 x 22.5 mm 961-10020-10	alu cap 10 mm centre hole; silicone white/PTFE beige; 3.2 mm thick; 45° shore A 961-10030-04 
961-10010-28		plain aluminium cap 10 mm centre hole; silicone blue transparent/ PTFE white; UltraClean; 3.0 mm thick; 45° shore A 961-10030-22 
961-10010-30		magnetic bi-metal cap 8 mm centre hole; silicone blue /PTFE transparent; UltraClean; 3.0 mm thick; 45° shore A 961-10030-08 

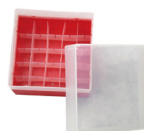
Additional accessories

■ **Crimper / Decapper**



Part Number	Description
961-10050-01	20 mm crimper
961-10050-03	20 mm decapper

■ **Storage boxes for 10 / 20 ml headspace vials, 1 pc. / pack**



Part number	961-10050-10
Material, colour	PP, red
For vials ml	10 / 20
Capacity pcs	25
Dimensions [mm]	130 x 130 x 102

See the full range of accessories on page 30

6 TOC VIALS / EPA VIALS

6.1 CERTIFIED 40 ML SCREW NECK

■ Features

- Pre-cleaned for low level TOC analysis
- Less than 10 ppb TOC
- Certificate included




- **Glass vials 40 ml , screw neck, 72 pcs. / pack**
Open top caps, PTFE / Silicone septum

Part number	227-34039-01
Volume [ml]	40
Material, colour	glass, clear
Neck	screw
Head OD-ø [mm]	24
Dimensions [mm]	95.0 x 27.5



SHIMADZU Excellence in Science		
PRODUCT CERTIFICATION		
P/N:	227-34039-01	
LOT:	TOC-960300	
PROCESS:	03190202	
DESCRIPTION:	40ml, TOC Screw Neck Vial, 10µg/L certified, with pre-screened 24mm bonded PP Screw Cap, white, hole: Silicone PTFE, 23mm with plastic cover	
This is to certify that the item as stated above has been processed in the controlled method.		
SPECIFICATION		
Total vial contribution after blank subtraction is as listed:		
ANALYTE	SPECIFICATION	RESULT
Total Organic Carbon	< 10µg/L	< 10µg/L
We certify that the item in above meets our specification.		
Approved by: _____		
Shimadzu Corporation		

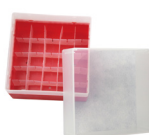
6.2 STANDARD 40 ML EPA SCREW NECK

Part number	Item	Description	Content	
961-10010-09	Full kit of 100 Vials, Caps and Septa	see data below	100 pcs. / pack	
961-10020-29	Replacement Vials	40 ml glass, clear; 24 mm screw neck; flat bottom; 95.0 x 27.5 mm	100 pcs. / pack	
961-10030-24	Replacement Caps	white PP-cap 15.0 mm centre hole; 24 mm thread; silicone red/PTFE white	100 pcs. / pack	
961-10040-01	Replacement Septa	24 mm; silicone red/PTFE white	100 pcs. / pack	




Additional accessories

- **Storage boxes for 40 ml EPA-vials, 1 pc. / pack**




Part number	961-10050-11
Material, colour	PP, red
For vials ml	40
Capacity pcs	16 (4 x 4)
Dimensions [mm]	130 x 130 x 80




6.3 STANDARD 24 ML SCREW NECK

Part number	Item	Description	Content	
638-41462	Vial	24 ml glass, clear; 20 mm screw neck; flat bottom; 85.0 x 22 mm	100 pcs. / pack	
638-20074-01	Cap	black PP-cap; 12.0 mm centre hole; 20 mm thread; silicone white/PTFE white	100 pcs. / pack	
038-00165-61	Septa	20 mm; silicone white/PTFE white	100 pcs. / pack	

6.4 STANDARD 125 ML SCREW NECK

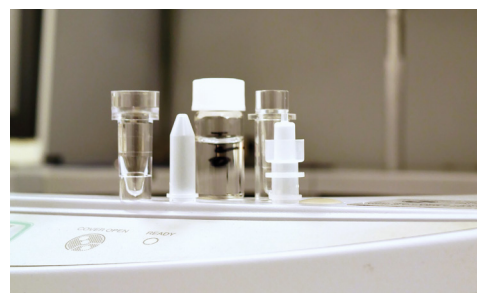
Part number	Item	Description	Content	
631-90165	Vial	125 ml glass, clear; 22 mm screw neck; round bottom; 110 x 47 mm	24 pcs. / pack	
638-20074-02	Cap	black PP-cap; 12.0 mm centre hole; 22 mm tread; silicone red/PTFE white	100 pcs. / pack	
038-00165-49	Septa	22 mm; silicone red/PTFE white	100 pcs. / pack	

6.5 STANDARD 9 ML

Part number	Item	Description	Content	
638-53096	Vial	9 ml glass, clear; round bottom; 100 x 13 mm	100 pcs. / pack	

7 VIALS FOR CLAM-2000/2030

The Shimadzu CLAM-system is a fully automated sample preparation module for LC-MS. It features special vials with septum for handling internal standards solutions. The use of these vials with septum prevents internal standards from evaporating. By applying the micro „cup-on“ tubes the dead volumes of calibrator solutions and QC samples are improved and the running costs are reduced.



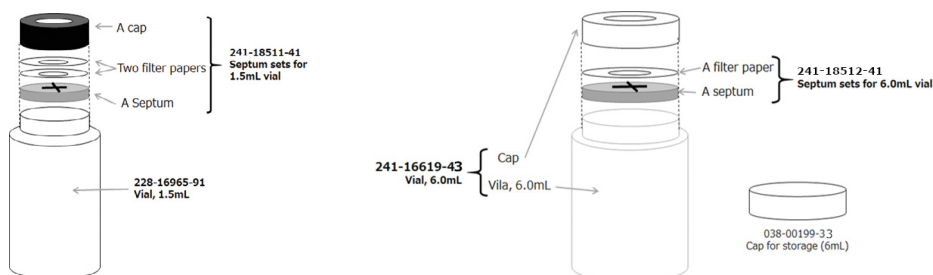
7.1 CLAM REAGENT VIALS

■ Glass vials with screw neck



Part number	228-16965-91	241-16619-43	038-00199-06	223-81340-41
Volume [ml]	1.5	6.0	12.0	12.0
Specification	with dedicated slit septum for internal standard	with dedicated slit septum for internal standard	vial with dedicated cap for detergent or dilution	with dedicated septum and cap for methanol or acetonitrile
Material, colour	glass, clear	glass, clear	glass, clear	glass, clear
Neck	screw neck	screw neck	screw neck	screw neck
Bottom	flat	flat	flat	flat
Dimensions [mm]	11.6 x 32.0	18.0 x 40.0	24.0 x 50.0	24.0 x 50.0
Content (pcs. per pack)	100	50	1	1
For CLAM-system	2030	2030	2000/2030	2030

How to assemble vial, cap and septum:



Part number	CLAM Caps			CLAM Septum	
	241-18511-41	038-00199-33	038-00199-34	241-18512-41	223-81468-02
For vial	228-16965-91	241-16619-43	223-81340-41	241-16619-43	223-81340-41
Additional Info	./.	./.	./.	set includes 50 slit septum and 50 filter papers	for preventing moisture in contained organic solvent
Content (pcs. per pack)	set includes 100 caps, 100 slit septum, 200 filter papers	1	1	50	1
For CLAM-system	2030	2030	2030	2030	2030

7.2 CLAM FILTRATION AND COLLECTION SET

Filtration and collection vial are sold as a set:

Pore size of filter = 0.45 µm



Part number	241-16593-41	241-16593-42	241-16593-43
Content (set per pack)	100	500	2000



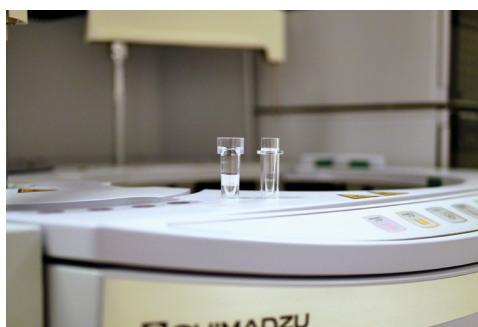
Dedicated
filtration vial



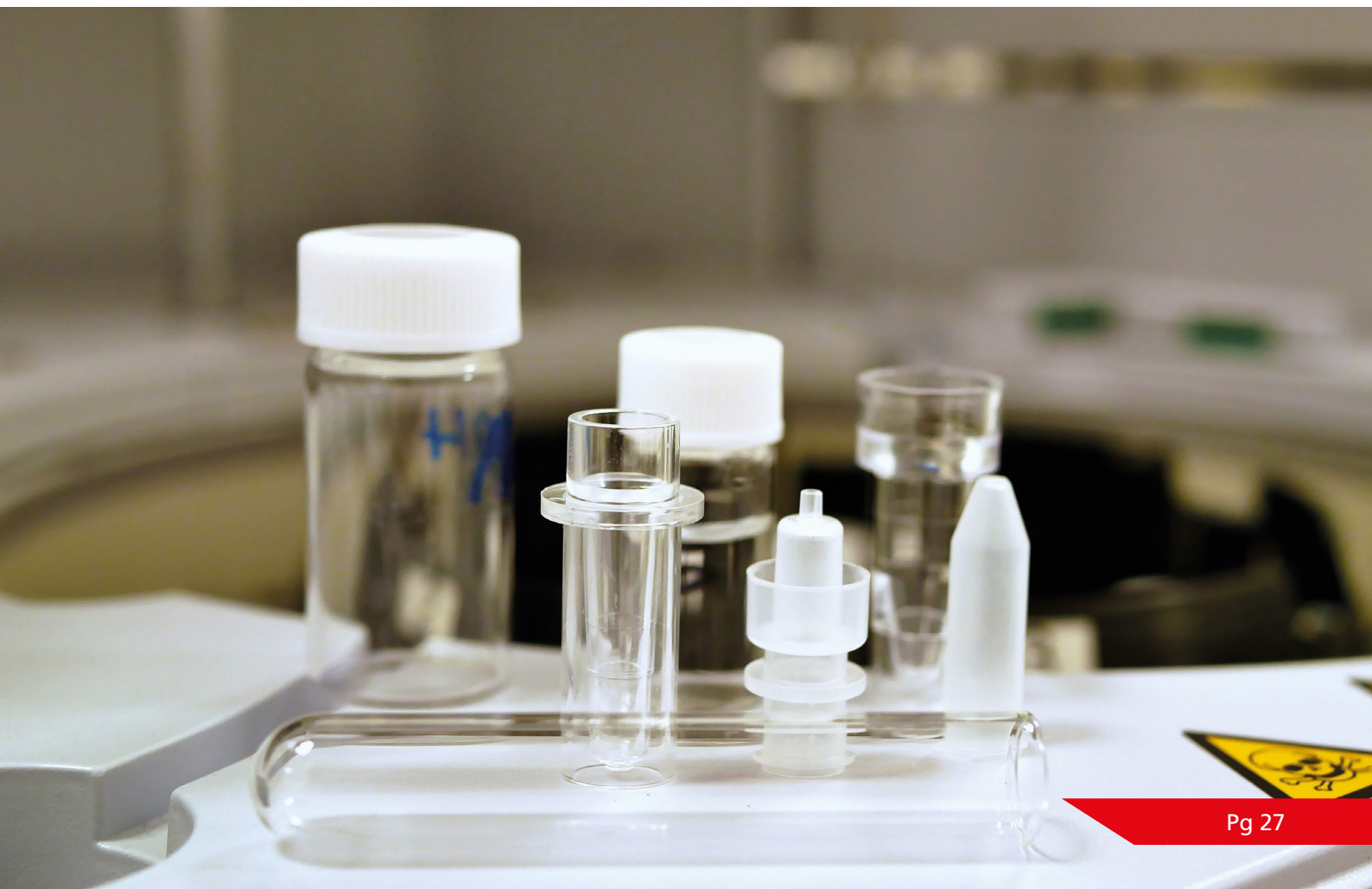
Dedicated
collection vial

7.3 CLAM SAMPLE CONTAINER

Standard cup and Micro cup cannot be used for samples, calibrators or controls which contains organic solvents. They are made of polystyrene and if an organic solvent is added, the container may crack or contaminants may be eluted and the samples may not be analyzed correctly.



Part number	038-00531-01	241-94045-01
Volume [ml]	2.0	0.5
Material, colour	PS, clear	PS, clear
Neck	straight	straight
Head OD-ø [mm]	16.9	11.8
Bottom	conical	conical
Dimensions [mm]	12 x 38	17 x 38
Content (pcs. per pack)	1000	1000
For CLAM-system	2000/2030	2000/2030



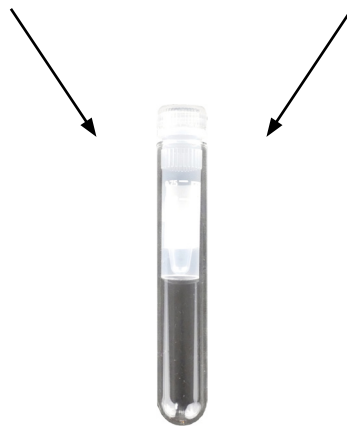
7.4 CLAM TEST TUBES FOR CUP-ON-TUBES

7.5 CLAM MICRO TUBES FOR CUP-ON-TUBES

Sample or calibrators are contained in micro tubes. The micro tube is inserted in test tube = cup-on-tube. The cup-on-tube is placed in dedicated sample rack. This configuration helps to achieve very small dead volume and enables the user to store away precious samples and place a barcode on it.



Part number	046-00342-01
Volume [ml]	5
Material, colour	PP, clear
Neck	straight
Bottom	round
Dimensions [mm]	13 x 75
Content (pcs. per pack)	1
For CLAM-system	2030



Part number	038-00051-68
Volume [ml]	1.5
Material, colour	PP, clear
Neck	screw neck
Bottom	conical
Dimensions [mm]	11 x 44
Content (pcs. per pack)	1
For CLAM-system	2030

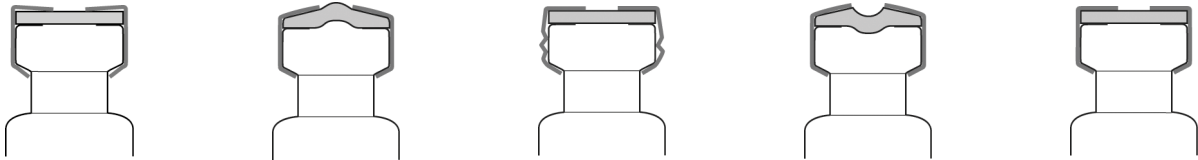


8 ACCESSORIES

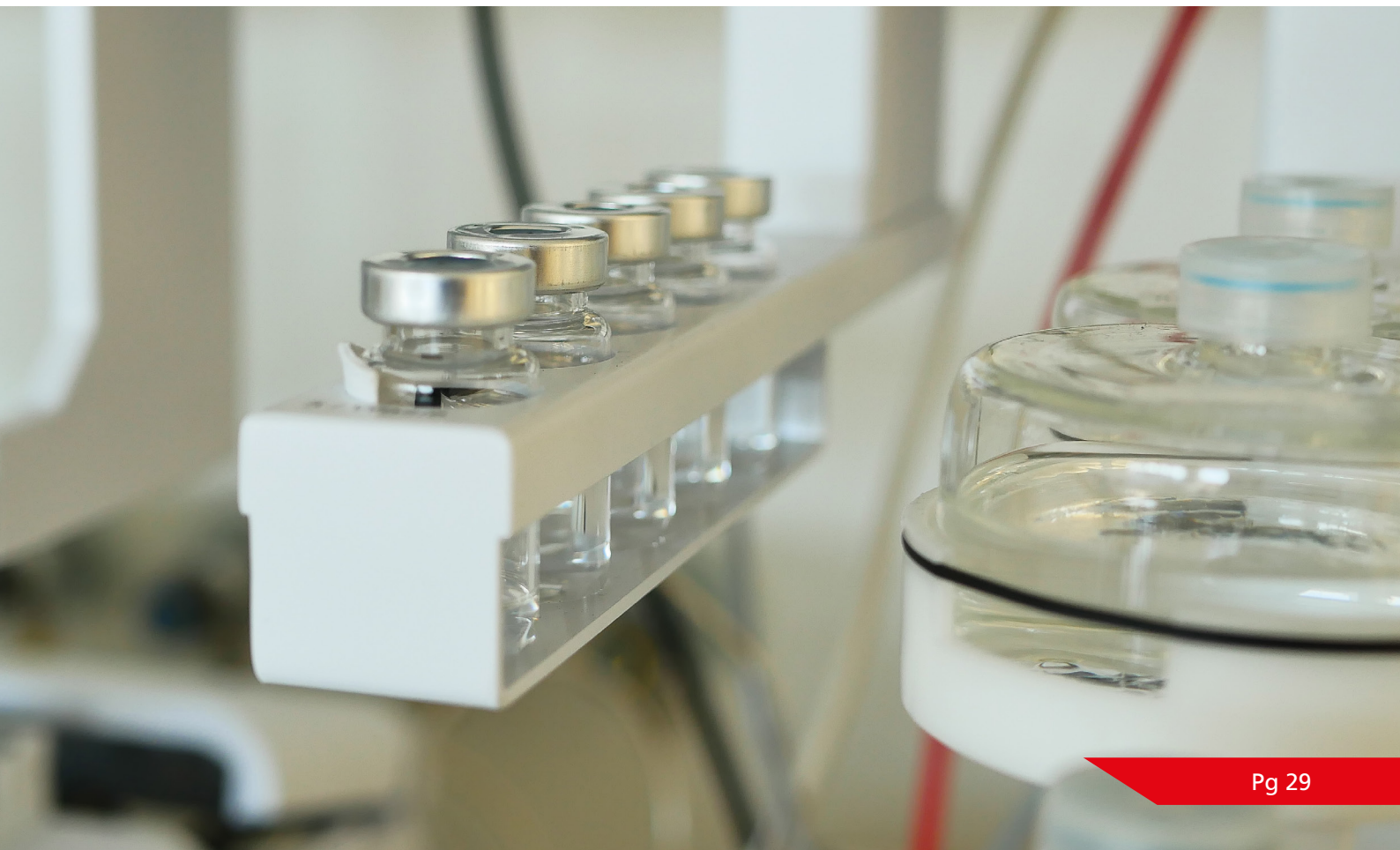
8.1 CRIMPERS / DECAPPERS

- Crimping tools for manual decapping or crimping
- Secure vial closing when following the instructions, see below

Part Number	Description
961-10050-02	11 mm Crimper
961-10050-04	11 mm Decapper
961-10050-01	20 mm Crimper
961-10050-03	20 mm Decapper



Undercrimped	Overcrimped	Overcrimped	Overcrimped	Correct crimp
Change pressure with screw in handle and change height with screw in head	Change pressure with screw in handle and change height with screw in head	Change height with screw in head	Change pressure with screw in handle	Perfect



8.2 RACKS AND STORAGE BOXES

- One-piece solid construction
- Stackable for space saving storage

All storage boxes on this page have a temperature resistance from -80°C up to 100°C, chemical resistance and robustness. Made of unbreakable polypropylene. The transparent lid prevents condensations when stored in fridges

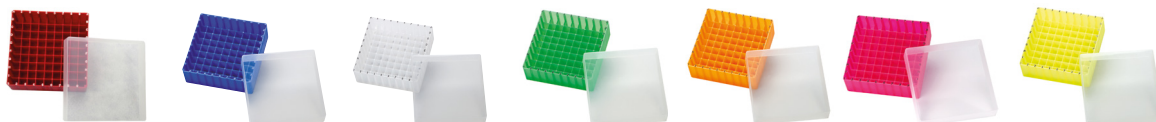
■ Vial racks for 1.5 ml, 1 pc. / pack

Part number	961-10050-05
Material, color	PP, red
For vials ml	1.5
Capacity pcs	50 (10 x 5)
Dimensions [mm]	200 x 105 x 17
Stackable	yes



■ Storage boxes for 1.5 ml vials, 1 pc. / pack

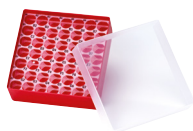
Alphanumeric coding at all 4 margins and at the bottom of the cavities



Part number	961-10050-09	961-10050-07	961-10050-08	961-10050-12	961-10050-13	961-10050-14	961-10050-15
Material, color	PP, red	PP, blue	PP, transparent	PP, green	PP, orange	PP, pink	PP, yellow
For vials ml	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Capacity pcs	81 (9 x 9)	81 (9 x 9)	81 (9 x 9)	81 (9 x 9)	81 (9 x 9)	81 (9 x 9)	81 (9 x 9)
Dimensions [mm]	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45	130 x 130 x 45

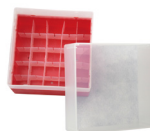
■ Storage boxes for 4.0 ml vials, 1 pc. / pack

Alphanumeric coding at the cavities



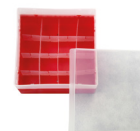
Part number	961-10050-06
Material, color	PP, red
For vials ml	4.0
Capacity pcs	49 (7 x 7)
Dimensions [mm]	130 x 130 x 52

■ Storage boxes for 10 / 20 ml vials, 1 pc. / pack



Part number	961-10050-10
Material, color	PP, red
For vials ml	10 / 20
Capacity pcs	25 (5 x 5)
Dimensions [mm]	130 x 130 x 102

■ Storage boxes for 40 ml EPA-vials, 1 pc. / pack



Part number	961-10050-11
Material, color	PP, red
For vials ml	40
Capacity pcs	16 (4 x 4)
Dimensions [mm]	130 x 130 x 80

Technical Information:

Temperature range for septums:

Silicone / PTFE: -60° C up to 200° C

Rubber / PTFE: -40° C up to 110° C

Natural rubber / TEF: -40° C up to 120° C

Butyl / PTFE: -40° C up to 120° C

UltraClean:

UltraClean septum is used for critical analysis

Abbreviations:

Alu Aluminium

PP Polypropylene

PE Polyethylene

PTFE Polytetrafluorethylene

TEF Tetrafluoroethylene

TPX Polymethylpentene

Features of Shimadzu vials and septums

- 1st hydrolic class and silanized glass
- Vials are packaged in a cleanroom
- Contamination-free septum production



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