



AOC-20i Autoinjector & AOC-20S Autosampler Consumables

Shimadzu
Gas Chromatography



Description	Part No.	Qty
Plug type Septa, for all Models of GC and all Injection Ports		
Low Bleed Injector Septa, Supelco LB-2 Thermogreen, operate up to temperature of 350C, green color	220-94781-00	50/pk.
Low Bleed Injector Septa, Restek Thermolite, operate up to temperature of 340C, light green color	220-90547-00	50/pk.
Long Life SUN SRI LL-SP Injector Septa, operate up to temperature of 290C, Blue color	220-90638-00	25/pk.
High Temperature SUN SRI HT-SP Injector Septa, operate up to temperature of 306C, Red color	221-48398-91	25/pk.
Low Temperature Shimadzu Injector Septa, operate up to temperature of 200C, Cream-white color	201-35584-00	20/pk.
Autoinjector Syringes (42mm Needle Length)		
SGE Series II Autoinjector Syringe, 10uL, 0.63mm OD (23 gauge) fixed cone tip style needle, shipped with AOC20i	221-34618-00	each
Hamilton Autoinjector Syringe, 10uL, 0.63mm OD (23 gauge) fixed cone tip style needle, teflon tipped (gas tight) plunger	220-90624-00	each
SGE Series II Autoinjector Syringe, 10uL, 0.63mm OD (23 gauge) removable cone tip style needle	220-90282-20	each
Needles, replacements for 220-90282-20 SGE syringe, cone tip style, 0.63mm OD	220-90281-20	2/pk.
SGE Series II Autoinjector Syringe, for On Column Injection, 10uL, 0.47mm OD (26 gauge) removable cone tip style needle	220-90282-21	each
Needles, replacements for 220-90282-21 SGE syringe, cone tip style, 0.47mm OD for OCI	220-90281-21	2/pk.
Needles, for 220-90282-21 SGE syringe, cone tip style, dual taper 0.47mm and 0.63mm OD for OCI	220-90282-23	2/pk.
SGE Series II Autoinjector Syringe, for PTV Injection, 50uL, 0.63mm OD (23 gauge) fixed cone tip style needle	221-45243-00	each
SGE Series II Autoinjector Syringe, for PTV Injection, 250uL, 0.63mm OD (23 gauge) fixed cone tip style needle	221-45244-00	each
Needle Guides (under injection port septum retaining nut)		
Needle Guide required with AOC20i. On GC14, GC15, GC17 and GC2010 Split/Splitless Injection Ports. (5.8mm length) Same part as 221-44584 in 2 pack.	221-44823-91	2/pk.
Needle Guide required with AOC20i. On GC14, GC15, GC17 and GC2010 Split/Splitless Injection Ports. (5.8mm length)	221-44584	each
Needle Guide required with AOC20i. On GC14 and GC15 On Column (OCI) Injection Ports. 12mm length	221-45205	each



Plug Septa

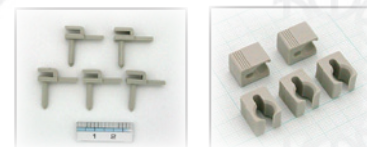


Autoinjector Syringes



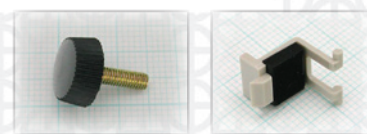
Needle Guide

Description	Part No.	Qty
Syringe Plunger Holder, Barrel Holder, Set Screw and Clip		
A) Syringe Plunger Holder, clips onto syringe plunger button and has post for being held by Set Screw.	221-45177-91	5/pk.
B) Syringe Barrel Holder, clips onto syringe glass barrel for easier install and removal. Same as 221-44780 in 5 pack.	221-45178-91	5/pk.
C) Set Screw, Black knurled headed screw that holds the Syringe Plunger Holder	037-02820	each
D) Syringe Clip, hinged clip and foam pad to press and lock in syringe glass barrel	221-48989-91	each
20i Autoinjector Vial Racks and Vial Holders		
A) Short Rack Assembly, for analysis without AOC20S Autosampler, contains six 1.5mL vial holder positions and two 4mL rinse/waste vial holder positions.	221-45610-91	each
B) Short rack, without vial holders. (One 6 vial and one rinse/waste vial holder snaps into this rack.)	221-45608-91	each
C) Vial Holder, Six 1.5 mL vial positions, without cooling holes. (Snaps into rack.)	221-45609-92	each
C) Vial Holder, Six 1.5 mL vial positions, with cooling holes. (Snaps into rack. Only for adding the second vial holder to a long rack with the water cooling option.)	221-45609-91	each
D) Long Rack Assembly, for analysis without AOC20S, contains twelve 1.5mL vial holder positions and two 4mL rinse/waste vial holder positions. (Can add two 221-32949-01 to have six 4mL rinse/waste vial positions.)	221-45622-91	each
E) Vial Holder, for Rinse/Waste vials, Two 4mL vial positions (Snaps into rack.)	221-32949-01	each
F) Vial Holder, used with AOC20S only. One 1.5mL vial target position and one 4mL standard solution position. (Snaps into short rack used with AOC20S.)	221-45181	each
Vial Holder, used with AOC20S only. One 4mL vial target position and one 4mL standard solution position. (Snaps into short rack used with AOC20S.)	221-45182	each
20S Autosampler Vial Racks		
A) Vial Rack, for AOC20S Autosampler, twenty five 1.5mL vial positions, without cooling. (60 degree carousel section.)	221-44709-91	each
Vial Rack, for AOC20S Autosampler, sixteen 4mL vial positions, without cooling. (60 degree carousel section.)	221-44710-91	each
B) Vial Rack Kit, Water Cooling for AOC20S, twenty five 1.5mL vial positions per rack, 5 water cooling vial racks with cooling water tubing.	221-44998-91	each



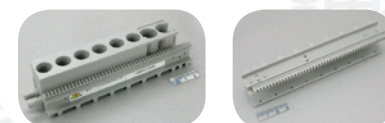
(A)

(B)



(C)

(D)



(A)

(B)



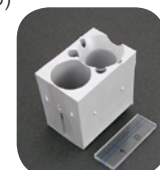
(C)



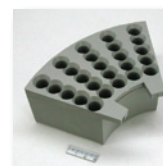
(D)



(E)



(F)



(A)



(B)

Vial Type	Part No.	Qty	Dimensions
Low Adsorption Glass Prominence 9mm closure Vials (all have blue caps with integrated white PTFE/silicone septa)			
A) 1.5 mL with screw cap, clear glass	228-45450-91	100/pk.	12 x 32 mm
A) 1.5 mL with screw cap, clear silanized glass	228-45451-91	100/pk.	12 x 32 mm
A) 1.5 mL with screw cap, amber glass	228-45452-91	100/pk.	12 x 32 mm
A) 1.5 mL with screw cap, amber silanized glass	228-45453-91	100/pk.	12 x 32 mm
B) 200 uL Q-sert™ with screw cap, 1.5 mL clear glass with fused insert	220-91521-03	100/pk.	12 x 32 mm
Low Adsorption Glass 13-425 closure Vials (all have black caps with integrated white PTFE/silicone septa)			
D) 4 mL with screw cap, clear glass	220-91521-08	100/pk.	15 x 45 mm
D) 4 mL with screw cap, amber glass	220-91521-09	100/pk.	15 x 45 mm
Extra Low Adsorption Glass 9mm closure Vials (all have blue caps with integrated white PTFE/silicone septa)			
E) 1.5 mL MT-ITTM center draining with screw cap, clear	220-91521-01	100/pk.	12 x 32 mm
E) 1.5 mL MT-ITTM center draining with screw cap, amber	220-91521-02	100/pk.	12 x 32 mm
Extra Low Adsorption Glass 13-425 closure Vials (all have black caps with white integrated PTFE/silicone septa)			
E) 4 mL MT-ITTM center draining with screw cap, clear	220-91521-10	100/pk.	15 x 45 mm
E) 4 mL MT-ITTM center draining with screw cap, amber	220-91521-11	100/pk.	15 x 45 mm
Borosilicate Glass Vials (all have skirted polypropylene caps and red PTFE/beige silicone septa)			
1.5 mL with screw cap, clear glass, 8-425 closure	228-15652-92	100/pk.	12 x 32 mm
4 mL with screw cap, clear glass, 13-425 closure	228-21287-91	100/pk.	15 x 45 mm



(A)

- 1.5 mL standard vials
- Clear or amber glass
- Snap caps or screw caps with PTFE/silicone septum or septumless PE



(B)

- 200 uL Q-sert vials
- Clear glass with fused insert
- Screw caps with PTFE/silicone septum or septumless PE

Fill Volume	Insert Available	Replacement Cap/ Septum	Replacement Vials
1.5 mL	C) 220-91521-04, 200uL, 100/pk.	228-45454-91, 1000/pk.	N/A
1.5 mL	C) 220-91521-04, 200uL, 100/pk.	228-45454-91, 1000/pk.	N/A
1.5 mL	C) 220-91521-04, 200uL, 100/pk.	228-45454-91, 1000/pk.	N/A
1.5 mL	C) 220-91521-04, 200uL, 100/pk.	228-45454-91, 1000/pk.	N/A
200 uL	N/A	220-91521-04, 200uL, 100/pk.	N/A
3.5 mL	228-21284-91, 300 uL with spring, 100/pk 228-21285-91, 300 uL insert only, 100/pk	220-91521-14, 1000/pk.	N/A
3.5 mL	228-21284-91, 300 uL with spring, 100/pk 228-21285-91, 300 uL insert only, 100/pk	220-91521-14, 1000/pk.	N/A
1.2 mL	N/A	228-45454-91, 1000/pk.	N/A
1.2 mL	N/A	228-45454-91, 1000/pk.	N/A
3.0 mL	N/A	220-91521-14, 1000/pk.	N/A
3.0 mL	N/A	220-91521-14, 1000/pk.	N/A
*Replacement Cap		*Replacement Septa	
* The following titles refer to the borosilicate glass vials only			
1.5 mL	220-90384-00, 100/pk	221-34271-92, 8 mm, 100/pk	038-00165-06, 100/pk
3.5 mL	220-90394-00, 100/pk	228-21290-91, 12 mm, 100/pk	220-90393-00, 100/pk



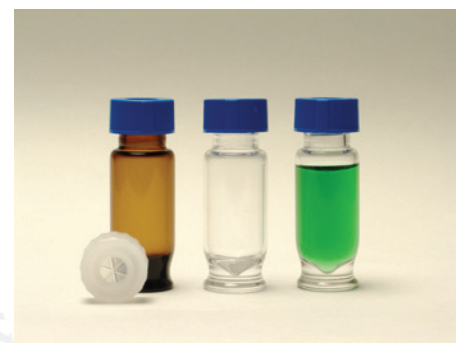
(C)

- 200 uL insert with spring
- Fits 1 mL and 1.5 mL vials



(D)

- 4 mL standard vials
- Clear or amber glass
- Screw caps with PTFE/
silicone septum



(E)

- 1.5 mL MT-IT™ vials
- Clear or amber glass
- Screw caps with PTFE/
silicone septum or
septumless PE

Vial selection for an GC system is an important but often overlooked step. Several characteristics of the vials and septa are critical for optimum performance in GC run. These vials have been thoroughly tested for compatibility with Shimadzu autosamplers, so superior performance is assured.

Vial Mouth Opening

A 6mm opening for the 1.5 (Prominence) mL vial provides a better target for the autosampler needle and makes filling easier and cleaner.

Septa Quality

The low and extra low adsorption glass 1.5 and 4 mL vials use a PTFE/silicone septum, and its cleanliness is suitable for the most discriminating GC analyses. Additionally, the septum is press-fit inside the cap with no bonding agents to potentially contaminate samples, and it prevents the needle from pushing the septum into the vial.

Low Adsorption Glass

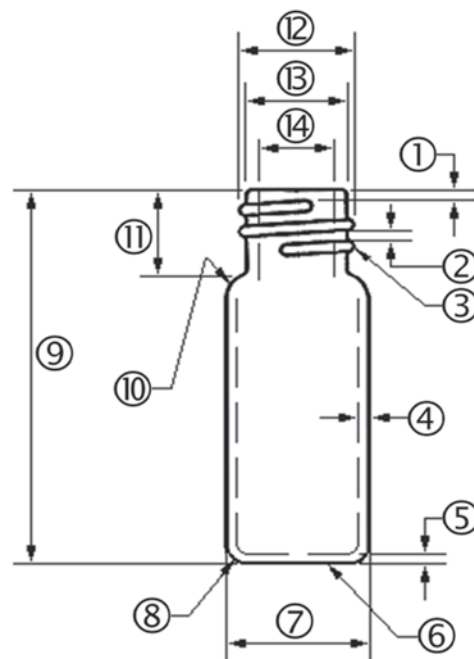
Prominence Low and Extra Low Adsorption glass vials are made from pharmaceutical Type I Borosilicate glass by a unique process that yields a surface chemistry with significantly reduced sample interactions without the use of a coating. This results in extremely low compound loss through adsorption or catalytic degradation. Our glass vials have very low reactivity, pH shift, and leaching characteristics.

Extra Low Adsorption vials are a must for Mass Spec users or when working with micromolar concentrations and/or low sample volumes, where the surface-to-volume effects are much more pronounced.

The 12x32mm 1.5mL clear and amber vials are also available with silanized glass, which is a conventional way to lower adsorption of polar compounds by chemically modifying the glass with permanently bonded hydrophobic groups to make the surface inert. The process is a multi-step gas phase deactivation.

One-Twist Cap

The number of threads on the vial neck determines the amount of turn required to securely attach the cap. For high-throughput labs, our single-twist cap allows fast and easy sample preparation.



GC Excellence, *Plus*

Realize dramatic improvements in productivity with the **new GC-2010 Plus**. Out of the box, it's ready to perform high-speed GC utilizing the latest in ultra narrow-bore capillary columns. The fourth generation Advanced Flow Controller delivers up to 1200 ml/min, 140 psi of pressure and supports split ratios of 9000:1. With fast data collection and rapid cooling, the ultimate in fast GC capabilities has arrived. Combined with world-class sensitivity limits, it's simple: the new GC-2010 Plus is the clear winner.



The GC-2010 Plus features:

- New family of best-in-class detectors – addresses increasing sensitivity demands for trace-level analysis
- Rapid oven cooling
- Long-term stability of retention times
- Excellent precision
- **Advanced Flow Technology Accessories** – Reduce analysis times, provide enhanced chromatographic resolution, and enable application-specific configurations without compromising performance:
 - **Multidimensional GC** – delivers enhanced separation power, making it ideal for complex matrices
 - **Backflush** – shortens run times for improved productivity
 - **Detector Splitting** – Saves time/money, and enables confident peak identification



GCMS QP-2010 Ultra

Introducing the **GCMS-QP2010 Ultra** — Shimadzu's most advanced gas chromatograph mass spectrometer. Descended from the GCMS-QP2010 Plus, it features best-in-class scan speed and sensitivity. Improved data collection speed makes this the perfect instrument for Fast GC or comprehensive GC/MS (GCxGCMSq) analyses. In addition, a newly developed ecology mode saves power and carrier gas consumption allowing for a lower cost of ownership and less environmental stress.

GCMS-QP2010 Ultra
Gas Chromatograph Mass Spectrometer



The GCMS-QP2010 Ultra features:

- Maximum scan speed of 20,000 u/sec achieved with patented technology
- 500:1 S/N in EI mode
- Rapid GC oven cool-down— from 350° to 50° in 2.7 minutes
- Twin-Line MS System—eliminates the need to swap columns
- “Ecology mode” significantly reduces operating costs



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Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at www.shimadzu.com.