

VWR<sup>®</sup>

# Autosampler Vials, Inserts, and Closures



# VWR® Autosampler Vials, Inserts, and Closures - the complete line of VWR vials for chromatography

Vial choices include: crimp-top, snap-cap, and screw-top vials with a selection of closures. Refer to the autosampler compatibility table on pages 14-15 to determine which vials, closures, and inserts will work on your specific autosampler unit.

## featured products



### PLASTIC VIALS

- High clarity plastic vials for easy sample viewing
- Low extractable polypropylene provides broad compatibility and low non-specific binding
- 9mm Screw-Thread and Crimp/Snap closure options available



### MAGNETIC CLOSURE HEADSPACE VIALS

- Screw-thread magnetic headspace vials offer tool-free convenience
- Excellent sealing characteristics
- Steel magnetic caps for CTC/LEAP/Gerstel autosamplers



### CERTIFIED 9mm SCREW-THREAD KITS

- Lot-tested including HPLC and GC analysis for 9 critical parameters
- Certificate of conformance included in every pack
- Kits include 100 vials and 100 bonded cap/septum



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**VWR® 8mm STANDARD OPENING SCREW-THREAD VIALS**

**2mL, 12X32mm, 8mm STANDARD OPENING SCREW-THREAD VIALS AND INSERTS**

- 8-425 thread finish
- Vials feature a write-on patch with graduation for convenient sample identification
- Superior quality borosilicate glass
- Polyspring inserts are self-aligning and provide a cushion against needle contact
- Kits include 100 vials and 100 caps with pre-assembled septa

**RECOMMENDED FOR THE FOLLOWING INSTRUMENTS:**

- Beckman
- CTC
- Gilson
- Shimadzu
- VWR/Hitachi
- For autosampler compatibility
- Look on pages 14-15



**VWR® STANDARD OPENING SCREW-THREAD VIALS AND INSERTS**

| Description                  | Glass | Patched | Dimensions, mm | Profile      | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.         | Pack of | Case of |
|------------------------------|-------|---------|----------------|--------------|--------------|---------------|---------------------|------------------|---------|---------|
| 8-425 Screw-Thread Vial      | Clear | No      | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | <b>66020-950</b> | 100     | 1000    |
|                              | Clear | Yes     | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | <b>82028-420</b> | -       | 1000    |
|                              | Amber | No      | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | <b>46610-736</b> | 100     | 1000    |
|                              | Amber | Yes     | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | <b>82028-422</b> | -       | 1000    |
| 200 µL Flat Bottom Insert    | Clear | -       | 5 x 31         | Flat Bottom  | 250 µL       | 200 µL        | <12                 | <b>82028-448</b> | -       | 1000    |
| 150 µL Spring Insert         | Clear | -       | 5 x 29         | Pulled point | 200 µL       | 175 µL        | <1                  | <b>46610-702</b> | 100     | -       |
| 100 µL Conical Self Aligning | Clear | -       | 5 x 29         | Pulled point | 200 µL       | 170 µL        | <2                  | <b>82028-446</b> | 100     | -       |

**VWR® 8-425 SCREW-THREAD CAPS AND SEPTA**

| Description                   | Cap Color | Cap Material  | Septum                  | Hardness *Shore | Thickness, mm | Cat. No.         | Pack of    |
|-------------------------------|-----------|---------------|-------------------------|-----------------|---------------|------------------|------------|
| 8 mm Open Top Cap, 5.5mm Hole | Black     | Polypropylene | Red PTFE/White Silicone | 45°             | 1.3           | <b>46610-700</b> | <b>100</b> |

**VWR® STANDARD OPENING SCREW-THREAD VIAL CONVENIENCE KITS**

| Kit Type        | Glass | Patched | Cap Color      | Septum                  | Cat. No.         | Pack of | Case of |
|-----------------|-------|---------|----------------|-------------------------|------------------|---------|---------|
| Unassembled Kit | Clear | No      | Black          | Red PTFE/White Silicone | <b>66009-878</b> | 100     | 1000    |
| Assembled Kit   | Clear | No      | Black          | Red PTFE/White Silicone | <b>66009-874</b> | 100     | -       |
|                 | Clear | No      | Black Phenolic | Red PTFE/White Silicone | <b>66009-882</b> | 100     | -       |

**VWR® 9mm WIDE OPENING SCREW-THREAD VIALS**

**2mL, 12X32mm, 9mm WIDE OPENING SCREW-THREAD VIALS AND INSERTS**

- Write-on patch with graduation for convenient sample identification
- Wide neck opening design, allows easy filling
- Superior quality borosilicate glass
- Spring inserts are self-aligning and provide a cushion against needle contact

**RECOMMENDED FOR MOST BRANDS OF AUTOSAMPLERS:**

- For autosampler compatibility look on pages 14-15



**VWR® 9mm WIDE OPENING SCREW-THREAD VIALS AND INSERTS**

| Description                 | Glass         | Patched   | Dimensions, mm | Profile      | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.  | Pack of | Case of |
|-----------------------------|---------------|-----------|----------------|--------------|--------------|---------------|---------------------|-----------|---------|---------|
| 9 mm Screw-Thread Vial      | Clear         | No        | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | 46610-722 | 100     | 1000    |
|                             | Clear         | Yes       | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | 46610-724 | 100     | 1000    |
|                             | Amber         | Yes       | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.8 mL        | <170                | 46610-726 | 100     | 1000    |
|                             | Polypropylene | Graduated | 12 x 32        | Flat Bottom  | 2.0 mL       | 1.5 mL        | <170                | 89524-188 | 100     | -       |
| 9 mm Fused Insert Vial      | Clear         | Yes       | 12 x 32        | Conical      | 400 µL       | 300 µL        | <2                  | 89524-190 | 100     | -       |
|                             | Polypropylene | No        | 12 x 32        | Conical      | 400 µL       | 300 µL        | <2                  | 89524-190 | 100     | -       |
| 9 mm Fused Insert Vial      | Clear         | Yes       | 12 x 32        | Insert Vial  | 475 µL       | 350 µL        | <2                  | 10781-890 | 100     | -       |
| 9 mm Fused Insert Vial      | Amber         | No        | 12 x 32        | Insert Vial  | 475 µL       | 350 µL        | <2                  | 10803-888 | 100     | -       |
| 300 µL Spring Insert        | Clear         | -         | 6 x 31         | Conical      | 375 µL       | 250 µL        | <1                  | 46610-762 | 100     | -       |
|                             | Polypropylene | -         | 6 x 30         | Conical      | 325 µL       | 250 µL        | <2                  | 82028-450 | 100     | -       |
| 400 µL Flat Bottom Insert   | Clear         | -         | 6 x 31         | Flat Bottom  | 500 µL       | 450 µL        | <25                 | 82028-454 | -       | 1000    |
| 350 µL Self Aligning Insert | Clear         | -         | 6 x 31         | Pulled Point | 400 µL       | 350 µL        | <4                  | 82028-452 | 100     | -       |



**VWR® 9mm SCREW-THREAD CAPS AND SEPTA**

| Description                  | Cap Color | Cap Material  | Septum                             | Hardness *Shore | Thickness, mm | Cat. No.  | Pack of | Case of |
|------------------------------|-----------|---------------|------------------------------------|-----------------|---------------|-----------|---------|---------|
| 9 mm Open Top Cap, 6 mm Hole | Black     | Polypropylene | Ivory PTFE/Red Rubber              | 35°             | 1             | 46610-708 | 100     | 1000    |
|                              | Blue      | Polypropylene | Ivory PTFE/Red Rubber              | 35°             | 1             | 89239-016 | 100     | 1000    |
|                              | Black     | Polypropylene | Red PTFE/White Silicone/Red PTFE   | 45°             | 1             | 46610-710 | 100     | 1000    |
|                              | Blue      | Polypropylene | Red PTFE/White Silicone/Red PTFE   | 45°             | 1             | 89239-018 | 100     | 1000    |
|                              | Black     | Polypropylene | Red PTFE/White Silicone            | 50°             | 1             | 46610-712 | 100     | 1000    |
|                              | Blue      | Polypropylene | Red PTFE/White Silicone            | 50°             | 1             | 89239-020 | 100     | 1000    |
|                              | Black     | Polypropylene | Red PTFE/White Silicone, Pre-slit  | 55°             | 1             | 82028-424 | -       | 1000    |
|                              | Blue      | Polypropylene | Blue PTFE/White Silicone, Pre-slit | 55°             | 1             | 89239-022 | 100     | 1000    |
|                              | Green     | Polypropylene | Red PTFE/White Silicone            | 50°             | 1             | 76047-552 | 100     | -       |
|                              | Red       | Polypropylene | Red PTFE/White Silicone            | 50°             | 1             | 76047-554 | 100     | -       |
|                              | Yellow    | Polypropylene | Red PTFE/White Silicone            | 50°             | 1             | 76047-574 | 100     | -       |

**VWR® CERTIFIED 9MM SCREW-THREAD VIAL AND CLOSURE CONVENIENCE KITS**

- Lot-tested including HPLC and GC analysis for nine critical parameters
- Vial dimensions verified for height, diameter and bottom thickness
- Cap/septum tested for sealing and residue by GC headspace
- HPLC tested for non-volatile residue
- Certificate of conformance included in every pack
- Convenience Kits include 100 vials and 100 bonded cap/septum



| Description   | Glass | Patched | Cap Color | Septum                                      | Cat. No.  | Pack of |
|---|-------|---------|-----------|---|-----------|---------|
| Convenience Kit, Certified 9 mm Wide Opening Screw Vial, 2 mL | Clear | Yes     | Black     | Bonded Red PTFE/ White Silicone             | 82030-970 | 100     |
|   | Amber | Yes     | Black     |   | 82030-974 | 100     |
|   | Clear | Yes     | Gray      | Bonded Clear PTFE/ Clear Silicone, Pre-slit | 82030-972 | 100     |
|   | Amber | Yes     | Gray      |   | 82030-976 | 100     |
|   | Clear | Yes     | Blue      | Red PTFE/ White Silicone                    | 10804-054 | 100     |
|   | Amber | Yes     | Blue      |   | 10804-056 | 100     |
|   | Clear | Yes     | Blue      | Blue PTFE/ White Silicone, Pre-slit         | 10803-884 | 100     |
|   | Amber | Yes     | Blue      |   | 10803-886 | 100     |

**VWR® SCREW-THREAD VIAL AND CLOSURE CONVENIENCE KITS**

- Save time during sample preparation
- Reduce the risk of contamination
- Clear trays make it easy to keep track of available supplies without opening containers
- Unassembled kits include 100 vials and 100 caps with pre-assembled septa
- Reusable two-compartment trays protect vials and closure while keeping matching supplies together
- Assembled kits include 100 vials with pre-attached caps and septa



| Glass                  | Patched | Cap Color | Septum                             | Cat. No.  | Pack of | Case of |
|------------------------|---------|-----------|------------------------------------|-----------|---------|---------|
| <b>Unassembled Kit</b> |         |           |                                    |           |         |         |
| Clear                  | No      | Blue      | Ivory PTFE/Red Rubber              | 89239-024 | 100     | 1000    |
| Clear                  | No      | Black     | Ivory PTFE/Red Rubber              | 66009-858 | 100     | 1000    |
| Clear                  | No      | Black     | Red PTFE/White Silicone/Red PTFE   | 66009-862 | 100     | 1000    |
| Clear                  | No      | Black     | Red PTFE/White Silicone            | 66009-854 | 100     | 1000    |
| Clear                  | No      | Blue      | Red PTFE/White Silicone            | 89239-026 | 100     | 1000    |
| Clear                  | No      | Blue      | Blue PTFE/White Silicone, Pre-slit | 89239-028 | 100     | 1000    |
| Clear                  | Yes     | Blue      | PTFE/ Soft Durometer Silicone      | 89523-478 | 100     | -       |
| Amber                  | Yes     | Blue      | PTFE/ Soft Durometer Silicone      | 89523-480 | 100     | -       |
| <b>Assembled Kit</b>   |         |           |                                    |           |         |         |
| Clear                  | No      | Blue      | Ivory PTFE/Red Rubber              | 89239-030 | 100     | -       |
| Clear                  | No      | Black     | Ivory PTFE/Red Rubber              | 66009-856 | 100     | -       |
| Clear                  | No      | Black     | Red PTFE/White Silicone            | 66009-852 | 100     | -       |
| Clear                  | No      | Black     | Red PTFE/White Silicone/Red PTFE   | 66009-860 | 100     | -       |
| Clear                  | No      | Black     | PTFE/Red Rubber                    | 66009-857 | 100     | -       |

**VWR® 10mm WIDE OPENING SCREW-THREAD VIALS**

**2mL, 12X32mm 10mm WIDE OPENING SCREW-THREAD VIALS AND INSERTS**

- 10-425 thread finish
- Vials feature a write-on patch with graduation for convenient sample identification
- Wide-neck opening design allows for easy filling; requires inserts with a diameter of 6mm
- Polyspring inserts are self-aligning and provide a cushion against needle contact

**RECOMMENDED FOR THE FOLLOWING INSTRUMENTS:**

- PerkinElmer
- Shimadzu
- Waters

For autosampler compatibility look on pages 14-15



**VWR® 10mm WIDE OPENING SCREW-THREAD VIALS AND INSERTS**

| Description                 | Glass         | Patched | Dimensions, mm | Profile      | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.         | Pack of |
|-----------------------------|---------------|---------|----------------|--------------|--------------|---------------|---------------------|------------------|---------|
| 10-425 Screw-Thread Vial    | Clear         | No      | 12 x 32        | Flat Bottom  | 1.8 mL       | 1.5 mL        | <170                | <b>82028-426</b> | 1000    |
|                             | Clear         | Yes     | 12 x 32        | Flat Bottom  | 1.8 mL       | 1.5 mL        | <170                | <b>82028-428</b> | 1000    |
|                             | Amber         | Yes     | 12 x 32        | Flat Bottom  | 1.8 mL       | 1.5 mL        | <170                | <b>82028-432</b> | 1000    |
| 300 µL Spring Insert        | Clear         | -       | 6 x 31         | Conical      | 375 µL       | 0.25 mL       | <1                  | <b>46610-762</b> | 100     |
|                             | Polypropylene | -       | 6 x 30         | Conical      | 325 µL       | 250 µL        | <2                  | <b>82028-450</b> | 100     |
| 400 µL Flat Bottom Insert   | Clear         | -       | 6 x 31         | Flat Bottom  | 500 µL       | 450 µL        | <25                 | <b>82028-454</b> | 1000    |
| 350 µL Self Aligning Insert | Clear         | -       | 6 x 31         | Pulled Point | 400 µL       | 350 µL        | <4                  | <b>82028-452</b> | 100     |

**VWR® 10-425 WIDE OPENING SCREW-THREAD CAPS AND SEPTA**

- Polypropylene caps are chemically inert and suitable for most chromatography applications
- Pre-assembled caps and septa are convenient and minimize contamination from handling

| Description                    | Cap Color | Cap Material  | Septum                             | Hardness °Shore | Thickness, mm | Cat. No.         | Pack of |
|--------------------------------|-----------|---------------|------------------------------------|-----------------|---------------|------------------|---------|
| 10 mm Open Top Cap, 8.5mm Hole | Black     | Polypropylene | Blue PTFE/White Silicone, Pre-slit | 55°             | 1.5           | <b>82028-436</b> | 100     |
|                                | Black     | Polypropylene | Red PTFE/White Silicone            | 50°             | 1.3           | <b>82028-434</b> | 100     |

**VWR® 10mm WIDE OPENING SCREW-THREAD VIAL CONVENIENCE KITS**

- Recommended for Shimadzu HPLC Autosamplers
- Unassembled kits include 100 vials and 100 caps with pre-assembled septa

| Description     | Glass | Patched | Cap Color | Septum                        | Cat. No.         | Pack of |
|-----------------|-------|---------|-----------|-------------------------------|------------------|---------|
| Convenience Kit | Clear | Yes     | Black     | Red PTFE/White Silicone, Soft | <b>89523-482</b> | 100     |
|                 | Amber | Yes     | Black     | Red PTFE/White Silicone, Soft | <b>89523-484</b> | 100     |

**VWR® 11mm CRIMP-TOP VIALS**

**2mL, 12X32mm CRIMP-TOP VIALS AND INSERTS**

- Superior quality borosilicate glass
- Vials feature a write-on patch with graduation for convenient sample identification
- Standard opening vials require inserts with a diameter of 5mm
- Wide neck opening design, allows easy filling, requires inserts with a diameter of 6mm
- Spring inserts are self-aligning and provide a cushion against needle contact

**RECOMMENDED FOR MOST BRANDS:**

For autosampler compatibility look on pages 14-15



**VWR® 11mm CRIMP-TOP VIALS AND INSERTS – STANDARD OPENING**

| Description                       | Glass | Patched | Dimensions, mm | Profile      | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.  | Pack of | Case of |
|-----------------------------------|-------|---------|----------------|--------------|--------------|---------------|---------------------|-----------|---------|---------|
| 11 mm Crimp-Top, Standard Opening | Clear | No      | 12 x 32        | Flat Bottom  | 2 mL         | 1.5 mL        | <170                | 66020-953 | 100     | 1000    |
|                                   | Clear | Yes     | 12 x 32        | Flat Bottom  | 2 mL         | 1.5 mL        | <170                | 82028-402 | -       | 1000    |
|                                   | Amber | Yes     | 12 x 32        | Flat Bottom  | 2 mL         | 1.5 mL        | <170                | 82028-404 | -       | 1000    |
| 200 µL Insert                     | Clear | -       | 5 x 31         | Flat Bottom  | 250 µL       | 200 µL        | <12                 | 82028-448 | -       | 1000    |
| 150 µL Spring Insert              | Clear | -       | 5 x 29         | Pulled point | 200 µL       | 175 µL        | <1                  | 46610-702 | 100     | -       |
| 100 µL Conical Self Aligning      | Clear | -       | 5 x 29         | Pulled point | 200 µL       | 170 µL        | <2                  | 82028-446 | 100     | -       |



**VWR® 11mm CRIMP-TOP VIALS AND INSERTS – WIDE OPENING**

| Description                               | Glass         | Patched | Dimensions, mm | Profile       | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.  | Pack of | Case of |
|---|---------------|---------|----------------|---------------|--------------|---------------|---------------------|-----------|---------|---------|
| 11 mm Crimp-Top Vial, Wide Opening        | Clear         | No      | 12 x 32        | Flat Bottom   | 2 mL         | 1.5 mL        | <170                | 66010-539 | 100     | 1000    |
|   | Clear         | Yes     | 12 x 32        | Flat Bottom   | 2 mL         | 1.5 mL        | <170                | 46610-740 | 100     | 1000    |
|   | Polypropylene | No      | 12 x 32        | Conical       | 475 µL       | 300 µL        | <2                  | 82028-412 | -       | 1000    |
|   | Amber         | Yes     | 12 x 32        | Flat Bottom   | 2 mL         | 1.5 mL        | <170                | 46610-742 | 100     | 1000    |
| 11 mm Crimp-Top Vial 250 µL, Fused Insert | Clear         | Yes     | 12 x 32        | Fused Conical | 500 µL       | 350 µL        | <2                  | 82028-408 | 100     | -       |
|   | Amber         | Yes     | 12 x 32        | Fused Conical | 500 µL       | 350 µL        | <2                  | 82028-410 | 100     | -       |
| 300 µL Spring Insert                      | Clear         | -       | 6 x 30         | Conical       | 375 µL       | 250 µL        | <1                  | 46610-762 | 100     | -       |
|   | Polypropylene | -       | 6 x 30         | Conical       | 325 µL       | 250 µL        | <2                  | 82028-450 | 100     | -       |
| 400 µL Insert                             | Clear         | -       | 6 x 31         | Flat Bottom   | 500 µL       | 450 µL        | <25                 | 82028-454 | -       | 1000    |
| 350 µL Self Aligning Insert               | Clear         | -       | 6 x 31         | Pulled Point  | 400 µL       | 350 µL        | <4                  | 82028-452 | 100     | -       |



### VWR® 11mm CRIMP-TOP CLOSURES

- Aluminum crimp closures provide a secure leak-resistant seal
- Aluminum seals must be applied with a crimping tool
- Synthetic PTFE/Red Rubber seal is specially formulated for improved background performance



| Description                  | Cap Color | Cap Material | Septum                           | Hardness °Shore | Thickness, mm | Cat. No.  | Pack of | Case of |
|------------------------------|-----------|--------------|----------------------------------|-----------------|---------------|-----------|---------|---------|
| 11 mm Crimp-Top, 5.5 mm Hole | Silver    | Aluminum     | Clear PTFE/Natural Red Rubber    | 60°             | 1             | 46610-744 | 100     | 1000    |
|                              | Silver    | Aluminum     | Red PTFE/White Silicone/Red PTFE | 45°             | 1             | 46610-716 | 100     | 1000    |
|                              | Silver    | Aluminum     | Tan PTFE/White Silicone          | 45°             | 1.3           | 46610-714 | 100     | 1000    |
|                              | Silver    | Aluminum     | PTFE/Synthetic Red Rubber        | 35°             | 1             | 46610-754 | 100     | 1000    |

### VWR® 11mm CRIMP-TOP CONVENIENCE KITS

- Unassembled kits include 100 vials and 100 caps with pre-assembled septa
- Reusable two-compartment trays protect vials and closure while keeping matching supplies together
- Clear trays make it easy to keep track of available supplies without opening containers

| Kit Type   | Glass | Patched | Cap Color | Septum                    | Cat. No.  | Pack of | Case of |
|--|-------|---------|-----------|---------------------------|-----------|---------|---------|
| Convenience Kit, Standard Opening Crimp-Top Vial | Clear | No      | Silver    | Clear PTFE/Red Rubber     | 89239-004 | 100     | 1000    |
|  | Amber | No      | Silver    | Clear PTFE/Red Rubber     | 89239-006 | 100     | 1000    |
|  | Clear | No      | Silver    | Clear PTFE/Red Rubber     | 66009-850 | 100     | 1000    |
| Convenience Kit, Wide Opening Crimp-Top Vial     | Amber | No      | Silver    | Clear PTFE/Red Rubber     | 89239-008 | 100     | 1000    |
|  | Clear | No      | Silver    | Seal 2000 PTFE/Red Rubber | 66009-864 | 100     | 1000    |
|  | Clear | No      | Silver    | Tan PTFE/Silicone         | 66009-870 | 100     | 1000    |

### VWR® MANUAL CRIMPERS & DECAPPERS

- Easy and convenient handling
- Adjustable in crimping pressure limitation by screw in handle
- Adjustable screw setting facilitates optimum crimping



| Description     | Size, mm | Cat. No.  | Unit |
|-----------------|----------|-----------|------|
| Manual Crimper  | 11       | 76047-558 | Each |
|                 | 20       | 76047-562 | Each |
| Manual Decapper | 11       | 76047-566 | Each |
|                 | 20       | 76047-570 | Each |

**VWR® 11mm WIDE OPENING SNAP VIALS**

**2mL, 12X32mm WIDE OPENING SNAP-CAP VIALS AND INSERTS**

- Superior quality borosilicate glass
- Vials feature a write-on patch with graduation for convenient sample identification
- Wide-neck opening design, allows easy filling
- Spring inserts are self-aligning and provide a cushion against needle contact
- Snap vials can be used with snap caps or aluminum crimp seal closures

**RECOMMENDED FOR MOST BRANDS OF INSTRUMENTS:**

For autosampler compatibility look on pages 14-15



**VWR® 11mm WIDE OPENING SNAP-CAP VIALS AND INSERTS**

| Description                                | Glass         | Patched | Dimensions, mm | Profile       | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.         | Pack of | Case of |
|--|---------------|---------|----------------|---------------|--------------|---------------|---------------------|------------------|---------|---------|
| 11 mm Crimp/Snap Vial                      | Clear         | No      | 12 x 32        | Flat Bottom   | 2 mL         | 1.5 mL        | <170                | <b>66009-822</b> | 100     | 1000    |
|  | Clear         | Yes     | 12 x 32        | Flat Bottom   | 2 mL         | 1.5 mL        | <170                | <b>82028-414</b> | -       | 1000    |
|  | Amber         | Yes     | 12 x 32        | Flat Bottom   | 2 mL         | 1.5 mL        | <170                | <b>82028-416</b> | -       | 1000    |
| 300 µL Spring Insert                       | Polypropylene | No      | 12 x 32        | Conical Base  | 475 µL       | 300 µL        | <2                  | <b>82028-412</b> | 100     | -       |
|  | Clear         | -       | 6 x 30         | Conical       | 375 µL       | 0.25 mL       | <1                  | <b>46610-762</b> | 100     | -       |
| 400 µL Insert                              | Polypropylene | -       | 6 x 30         | Conical       | 325 µL       | 250 µL        | <2                  | <b>82028-450</b> | 100     | -       |
| 350 µL Self Aligning Insert                | Clear         | -       | 6 x 31         | Flat Bottom   | 500 µL       | 450 µL        | <25                 | <b>82028-454</b> | -       | 1000    |
| 11 mm Crimp/Snap Vial 350 µL, Fused Insert | Clear         | -       | 6 x 31         | Pulled Point  | 400 µL       | 350 µL        | <2                  | <b>82028-452</b> | 100     | -       |
|  | Clear         | No      | 12 x 32        | Fused Conical | 500 µL       | 350 µL        | <2                  | <b>10803-890</b> | 100     | -       |

**VWR® 11mm SNAP-CAPS AND SEPTA**

| Description              | Cap Color | Cap Material | Septum                             | Hardness *Shore | Thickness, mm | Cat. No.         | Pack of | Case of |
|--------------------------|-----------|--------------|------------------------------------|-----------------|---------------|------------------|---------|---------|
| 11 mm Snap Cap, 6mm hole | Clear     | Polyethylene | Clear PTFE/Synthetic Red Rubber    | 60°             | 1             | <b>46610-718</b> | 100     | 1000    |
|                          | Blue      | Polyethylene | Clear PTFE/Synthetic Red Rubber    | 60°             | 1             | <b>89239-010</b> | 100     | 1000    |
|                          | Clear     | Polyethylene | Red PTFE/White Silicone            | 50°             | 1.3           | <b>46610-720</b> | 100     | 1000    |
|                          | Blue      | Polyethylene | Red PTFE/White Silicone            | 50°             | 1.3           | <b>89239-012</b> | 100     | 1000    |
|                          | Clear     | Polyethylene | Blue PTFE/White Silicone, Pre-slit | 55°             | 1             | <b>82028-418</b> | -       | 1000    |
|                          | Blue      | Polyethylene | Blue PTFE/White Silicone, Pre-slit | 55°             | 1             | <b>89239-014</b> | 100     | 1000    |

**VWR® 11mm WIDE OPENING SNAP-CAP CONVENIENCE KITS**

- Save time during sample preparation
- Includes 100 vials and 100 caps with pre-assembled septa
- Reusable two-compartment trays protect vials and closures while keeping matching supplies together

| Kit Type                                    | Glass | Patched | Cap Color | Septum                    | Cat. No.         | Pack of | Case of |
|---|-------|---------|-----------|---------------------------|------------------|---------|---------|
| Convenience Kit, Wide Opening Snap-Cap Vial | Clear | No      | Clear     | Clear PTFE/Red Rubber     | <b>66009-868</b> | -       | 1000    |
|   | Clear | No      | Clear     | Clear PTFE/White Silicone | <b>66009-872</b> | 100     | 1000    |

**VWR® 4mL SCREW-THREAD VIALS**

**4mL, 15X45mm SCREW-THREAD VIALS AND INSERTS**

- 13-425 thread finish
- I-D vials feature a write-on patch with graduation for convenient sample identification
- Superior quality borosilicate glass

**RECOMMENDED FOR THE FOLLOWING INSTRUMENTS:**

- Shimadzu
- Gilson
- Waters (Wisp 48 Position Carousel)

For autosampler compatibility look on pages 14-15



**VWR® 4mL SCREW-THREAD VIALS AND INSERTS**

| Description              | Glass | Patched | Dimensions, mm | Profile     | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.         | Pack of | Case of |
|--------------------------|-------|---------|----------------|-------------|--------------|---------------|---------------------|------------------|---------|---------|
| 13-425 Screw-Thread Vial | Clear | No      | 15 x 45        | Flat Bottom | 4 mL         | 4 mL          | <800                | <b>66010-562</b> | 200     | 1000    |
|                          | Clear | Yes     | 15 x 45        | Flat Bottom | 4 mL         | 4 mL          | <800                | <b>82028-438</b> | -       | 1000    |
|                          | Amber | Yes     | 15 x 45        | Flat Bottom | 4 mL         | 4 mL          | <800                | <b>82028-440</b> | -       | 1000    |

**VWR® 13-425 SCREW-THREAD CAPS AND SEPTA**

| Description  | Cap Color | Cap Material  | Septum                             | Hardness °Shore | Thickness, mm | Cat. No.         | Pack of |
|--|-----------|---------------|------------------------------------|-----------------|---------------|------------------|---------|
| 13-425 Open-Top Screw Cap<br>13-425 Thread, 8.5mm Hole | White     | Polypropylene | Blue PTFE/White Silicone, Pre-slit | 55°             | 1.5           | <b>82028-442</b> | 100     |
|  |           | Phenolic      | Red PTFE/White Silicone            | 60°             | 1.5           | <b>82028-444</b> | 100     |
|  | Black     | Polypropylene | Red PTFE/White Silicone            | 60°             | 1.5           | <b>46610-706</b> | 100     |

**VWR® 4mL SCREW-THREAD CONVENIENCE KITS**

- Unassembled kits include 200 vials and 200 caps with pre-assembled septa
- Assembled kits include 100 vials with pre-attached caps and septa
- Packaged in convenient vial trays with clear covers

| Description     | Glass | Patched | Cap Color | Septum                  | Cat. No.         | Pack of |
|-----------------|-------|---------|-----------|-------------------------|------------------|---------|
| Unassembled Kit | Clear | No      | Black     | Red PTFE/White Silicone | <b>66009-880</b> | 200     |
| Assembled Kit   | Clear | No      | Black     | Red PTFE/White Silicone | <b>66009-876</b> | 100     |

**VWR® SHELL VIALS AND INSERTS**

- Polyethylene SepCap with starburst center design eases syringe needle penetration
- Convenient vial kits include equal quantities of vials and caps

| Description                 | Glass | Patched | Dimensions, mm | Profile     | Total Volume | Usable Volume | Residual Volume, µL | Cat. No.         | Pack of | Case of |
|-----------------------------|-------|---------|----------------|-------------|--------------|---------------|---------------------|------------------|---------|---------|
| 1 mL Shell Vial with SepCap | Clear | No      | 8 x 40         | Flat Bottom | 1.25 mL      | 1 mL          | <80                 | <b>66015-702</b> | 250     | 1000    |

**VWR® SCREW-THREAD HEADSPACE VIALS AND MAGNETIC CLOSURES**

- Screw-thread magnetic headspace vials offer tool-free convenience of a screw-thread vial
- Excellent sealing characteristics that withstand high pressures of headspace applications
- Steel magnetic caps tolerate high temperatures and are suitable for use with the CTC/LEAP/Gerstel autosamplers

| Description                               | Size  | Glass | Cat. No.  | Pack of |
|---|-------|-------|-----------|---------|
| Screw-Thread Headspace Vial, Round Bottom | 20 mL | Clear | 10119-902 | 100     |
|   | 20 mL | Amber | 10119-904 | 100     |
|   | 10 mL | Clear | 10119-906 | 100     |
|   | 10 mL | Amber | 10119-908 | 100     |



**VWR® MAGNETIC CLOSURES**

| Description                          | Septa Thickness | Septum                             | Hardness °Shore | Cat. No.  | Pack of |
|--------------------------------------|-----------------|------------------------------------|-----------------|-----------|---------|
| Magnetic Screw-Thread Headspace Caps | 1.5 mm          | White Silicone/Blue PTFE           | 55°             | 10119-910 | 100     |
|                                      | 1.6 mm          | Red Butyl/Grey PTFE                | 55°             | 10119-912 | 100     |
|                                      | 1.3 mm          | White Silicone/Red PTFE            | 45°             | 10119-914 | 100     |
|                                      | 1.3 mm          | Blue Silicone/White PTFE           | 45°             | 10119-916 | 100     |
|                                      | 1.5 mm          | White Silicone/Red PTFE, Star Slit | 55°             | 10119-918 | 100     |

VWR® Manual Crimpers & Decappers on page 9



**20mm CLEAR CRIMP SEAL HEADSPACE VIALS**

| Description       | Capacity | O.D. x L   | Top Finish  | Cat. No.  | Pack of |
|-------------------|----------|------------|-------------|-----------|---------|
| Round-Bottom Vial | 20 mL    | 23 x 75 mm | Bevel Edge  | 75983-244 | 100     |
| Flat Bottom Vial  | 20 mL    | 23 x 75 mm | Bevel Edge  | 75983-246 | 100     |
| Flat Bottom Vial  | 20 mL    | 23 x 75 mm | Square Edge | 75983-248 | 100     |

**20mm CRIMP CAPS WITH 9.5mm HOLE**

| Thickness | Cap Color | Cap Material | Septum                       | Cat. No.  | Pack of |
|-----------|-----------|--------------|------------------------------|-----------|---------|
| 3.2 mm    | Silver    | Aluminum     | Tan PTFE/White Silicone      | 75983-250 | 100     |
| 3 mm      | Silver    | Aluminum     | Gray PTFE/Red Rubber         | 75983-252 | 100     |
| 3 mm      | Silver    | Aluminum     | Gray PTFE/Gray Butyl Rubber  | 75983-254 | 100     |
| 3 mm      | Silver    | Aluminum     | Clear PTFE/Gray Butyl Rubber | 75983-256 | 100     |

# Septum Selection Guide

Septa for use with general chromatography vials

## PTFE/Natural Red Rubber

PTFE Natural Red Rubber are moderately priced seals for GC and HPLC with good chemical properties. They are ideal for multiple injections due to high resealability, but not as easy to penetrate as PTFE/RR.

## PTFE/High Performance Synthetic Red Rubber

PTFE Red Rubber is a highly pure synthetic red rubber septum that provides a reduced background level for specific GC applications, employing sensitive detectors such as ECD or NPD. PTFE Red Rubber has resealing characteristics similar to PTFE/Red Rubber and is pre-inserted into an aluminum seal.

## PTFE/Silicone Septa: (T/S)

High-quality, lowest background/blank value, 100% synthetic pure silicone septa, for all types of chromatographic applications. Laminated to 0.005" thick PTFE for a pure, highly inert septum with excellent resealing characteristics even after repeated punctures. PTFE/Silicone septa are ideal for use in most HPLC and GC applications where resealability and purity are critical. Cleaner than Natural Rubber or Red Rubber. Available with different hardnesses (durometers) meeting requirements of various needle types.

## Pre-slit PTFE/Silicone Septa

A PTFE/Silicone septum is provided with a thin 0.005" PTFE layer laminated to highly pure silicone, and slit through the center for easier needle penetration and to release the vacuum that forms when a large volume of sample is withdrawn from a vial. This septum provides chromatographic characteristics similar to that of a septum without a slit, except that the ability to withstand exposure to aggressive solvents is slightly lessened. Pre-slit septa are highly recommended for Shimadzu, Hitachi, and other autosamplers with thin gauge needles. Bonded caps: feature a PTFE/Silicone septum electrolytically bonded into the cap.

## PTFE/Silicone/PTFE Septa: (T/S/T)

A layer of 0.003" thick PTFE is laminated to each side of high-purity, medium durometer silicone to form a septum that is resistant to coring, but still maintains good resealing characteristics. T/S/T septa are recommended for the most critical applications such as ultratrace analysis, where there is a longer time between injections, or for internal standard methods. T/S/T septa provide superior performance with Agilent 1050, 1090, 1100, or any autosampler employing a large diameter, blunt-tip needle.



**AUTOSAMPLER COMPATIBILITY TABLE**

This table indicates the categories of vials that are compatible with various models of autosamplers. Certain autosamplers require the purchase of optional vial trays and, in few cases, programming upgrades to use all of the vials listed.

| Manufacturer   | Model   | 11mm Crimp and Snap | 8-425 Screw | 9mm Screw | 10-425 Screw | 13-425 Screw | Headspace |
|--|---|---------------------|-------------|-----------|--------------|--------------|-----------|
| Agilent  | 1050, 1090  | ●                   |             | ●         |              |              |           |
|  | 1100/1200   | ●                   |             | ●         |              |              |           |
|  | 7673A/7683A   | ●                   |             | ●         |              |              |           |
|  | 7693A   | ●                   | ●           | ●         |              | ●            |           |
|  | 5880/5890   | ●                   |             | ●         |              |              |           |
|  | 6850 (27 Pos. Tray)   | ●                   |             | ●         |              |              |           |
|  | 6850 (22 Pos. Tray)   | ●                   |             |           |              | ●            |           |
|  | 6890  | ●                   |             | ●         |              |              |           |
|  | CTC HTS+HTC PAL+CTC GC PAL  | ●                   |             | ●         |              |              |           |
|  | CTC Combi PAL   |                     |             |           |              |              | ●         |
| Beckman  | 501, 502/502e, 507/507e   | ●                   | ●           | ●         | ●            |              |           |
|  | Marathon, Promis  | ●                   | ●           | ●         |              |              |           |
|  | Triathlon, Standard Tray  | ●                   | ●           | ●         |              |              | ●         |
| CTC  | A200S   | ●                   | ●           | ●         | ●            |              |           |
|  | A200 LC   | ●                   | ●           | ●         | ●            |              | ●         |
|  | HS 500  |                     |             |           |              |              | ●         |
| CTC (LEAP)   | LC PAL (216 Pos.)   | ●                   | ●           | ●         | ●            |              | ●         |
|  | HTX PAL, HTC PAL, HTS PAL (54/98 Pos. Tray)   | ●                   | ●           | ●         | ●            |              | ●         |
|  | HTX PAL, HTC PAL, HTS PAL (32 Pos. Tray), Combi PAL (32 Pos. Tray), GC PAL (32 Pos. Tray), Combi PAL SPME Mode (32 Pos. Tray) |                     |             |           |              |              | ●         |
|  | Combi PAL (98 Pos. Tray), GC PAL (98 Pos. Tray)   | ●                   |             | ●         |              |              |           |
|  | Combi PAL SPME Mode (98 Pos. Tray)  | ●                   |             | ●         |              |              |           |
|  | UltiMate Analytical, cylindrical, WPS-3000 SL, 120 Pos. Rack (2ml)  | ●                   | ●           | ●         | ●            |              | ●         |
| Gerstel  | MPS   | ●                   | ●           | ●         |              | ●            | ●         |
| Gilson   | 201/202, 221/222, 231/401/232/402, Aspec, Aspec Xli, Aspec XL4  |                     | ●           | ●         |              |              |           |
|  | 221XL/222XL, 223, 231XL/232XL/233XL   |                     |             |           |              |              |           |
|  | 235/235P/SP 235/SP 235P   |                     | ●           | ●         |              |              |           |
| HTA  | HT200H  |                     |             |           |              |              | ●         |
|  | HT250D, HT280T, HT300L  | ●                   | ●           | ●         | ●            |              | ●         |
|  | HT300A, HT310A, HT3000A, HT3100A, HT3200A   | ●                   | ●           | ●         | ●            |              |           |
| PerkinElmer  | AS2000/AS2000B  | ●                   |             |           | ●            |              |           |
|  | AS-300, AS8300, Autosystem  | ●                   |             |           |              |              |           |
|  | LC 600, 60 vial tray  | ●                   |             |           | ●            |              |           |
| Shimadzu   | SIL-20A (Prominence) 105 vial tray/SIL-20AC (Prominence) 70 vial tray   | ●                   | ●           | ●         | ●            |              |           |
|  | SIL-20A/Sil-20AC (Prominence) 50 vial tray, LC2010C + LC2010A 100 Pos. Tray   |                     |             |           |              | ●            |           |
|  | LC2010C + LC2010A 350 Pos. Tray   |                     |             |           |              |              |           |
|  | LC2010C + LC2010A 140 Pos. Tray   | ●                   | ●           | ●         | ●            |              |           |
|  | HSS-2B  |                     |             |           |              |              | ●         |
|  | SIL-20AXR/SIL-20ACXR (Prominence) 175 (1-mL vials), 70 (1.5-mL vials), 50 (4-mL vials)  | ●                   | ●           | ●         |              | ●            |           |
| SIL-30AC(Nexera) 175 (1-mL vials), 105 (1.5-mL vials), 50 (4-mL vials) | ●   | ●                   | ●           |           | ●            |              |           |

- Indicates that the vials from this category are compatible with the autosampler in most configurations.
- Indicates that a magnetic seal is required for use with the autosampler.

| Manufacturer                           | Model  | 11mm Crimp and Snap | 8-425 Screw | 9mm Screw | 10-425 Screw | 13-425 Screw | Headspace |
|--|--|---------------------|-------------|-----------|--------------|--------------|-----------|
| Thermo Scientific                      | AS1000 (TRACE GC), AS200, AS2000 90 vial tray (TRACE GC)   | ●                   | ●           | ●         |              |              |           |
|  | AS300  | ●                   | ●           | ●         |              |              |           |
|  | AI3000 (II)/AS3000 (II) AS3500 (TRACE GC + FOCUS GC)   | ●                   |             | ●         |              |              | ●         |
|  | A200LC, AS 100   | ●                   | ●           | ●         |              |              |           |
|  | HS250, HS500, HS800, HS 850, HS2000  |                     |             |           |              |              | ●         |
|  | TriPlus (=GC PAL) (AS+ Duo)  | ●                   | ●           | ●         |              |              | ●         |
|  | TriPlus HS, TriPlus SPME   |                     |             |           |              |              | ●         |
|  | Surveyor (Surveyor Plus)   | ●                   | ●           | ●         |              |              | ●         |
|  | Accela High Speed LC Autosampler (200 Pos.)  | ●                   | ●           | ●         |              |              |           |
|  | Accela Open Autosampler (342 Pos)  | ●                   | ●           | ●         |              |              |           |
|  | TriPlus RSH  | ●                   | ●           | ●         |              |              | ●         |
|  | TriPlus 300  |                     |             |           |              |              | ●         |
| VWR/Hitachi                            | L2200 (LaChrom Elite)/L2200-U (LaChrom Ultra) (200 Pos. Tray), L7200 (LaChrom) (80 Pos. Tray)/L7250(LaChrom) (Pos. Tray) | ●                   | ●           | ●         |              |              |           |
|  | 655-A40 (108 Pos. Tray), L-9100, AS 2000 (50 Pos. Tray), AS 4000 (150 Pos. Tray)   | ●                   | ●           | ●         |              |              |           |
|  | 5210 (Chromaster) 195 Pos (1mL), 120 Pos 1.5mL (Standard), 72 Pos. (4mL), 2 x MTP (96,384)                               | ●                   | ●           | ●         |              | ●            |           |
|  | AS 6000  | ●                   | ●           | ●         |              |              |           |
|  | Acquity Sample Organizer   | ●                   |             | ●         |              |              |           |
| Waters                                 | Acquity/CapLC/Waters/Nano Acquity  | ●                   |             | ●         |              |              |           |
|  | Alliance HTS   |                     |             |           |              |              |           |
|  | Model 2767   | ●                   | ●           |           |              |              |           |
|  | Model 2707   | ●                   | ●           |           |              |              |           |
|  | Model 2777   | ●                   | ●           |           |              |              |           |
|  | ACQUITY™ UPLC Systems  |                     |             | ●         |              | ●            |           |
|  | Wisp 48 position   |                     |             |           |              | ●            |           |
|  | Wisp 96 position, 717, 96 Position Carousel  |                     |             |           |              | ●            |           |
|  | 717, 48 Position Carousel  |                     |             |           |              | ●            |           |
|  | Alliance, Alliance HT Syst.  | ●                   |             | ●         | ●            |              |           |
| Alliance GPC 2000                      |  |                     |             |           | ●            |              |           |
| Alliance 2790/2795, Alliance 2690/2695 | ●  |                     | ●           | ●         |              |              |           |

- Indicates that the vials from this category are compatible with the autosampler in most configurations.
- Indicates that a magnetic seal is required for use with the autosampler.

Vial reference chart

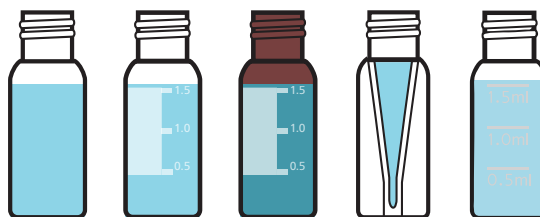
Images shown are 80% to scale

**8mm Standard-Opening  
Screw-Thread Vials – 12x32mm**



|                               |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 66020-950 | 82028-420 | 46610-736 | 82028-422 |
| <b>Common Description</b>     | 2mL       | 2mL       | 2mL       | 2mL       |
| <b>Approx. Total Capacity</b> | 1.9mL     | 1.9mL     | 1.9mL     | 1.9mL     |
| <b>Rec. Usable Volume</b>     | 1.5mL     | 1.5mL     | 1.5mL     | 1.5mL     |
| <b>Residual Volume</b>        | <170µL    | <170µL    | <170µL    | <170µL    |
| <b>Composition</b>            | Glass     | Glass     | Amber     | Amber     |

**9mm Screw Vials – 12x32mm**



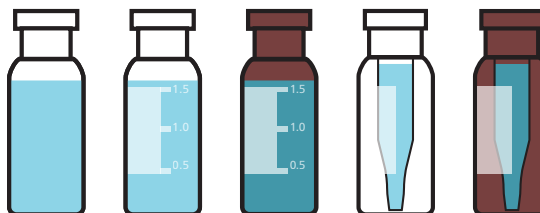
|                  |                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|------------------|
| <b>46610-722</b> | <b>46610-724</b> | <b>46610-726</b> | <b>89524-190</b> | <b>89524-188</b> |
| 2mL              | 2mL              | 2mL              | 450µL            | 2mL              |
| 2mL              | 2mL              | 2mL              | 250µL            | 2mL              |
| 1.5mL            | 1.5mL            | 1.5mL            | 250µL            | 1.5mL            |
| <170 µL          | <170µL           | <170µL           | <1µL             | <180µL           |
| Glass            | Glass            | Amber            | PP               | Clear PP         |

**10mm Wide Opening  
Screw-Thread Vials – 12x32mm**



|                               |           |           |           |
|-------------------------------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 82028-426 | 82028-428 | 82028-432 |
| <b>Common Description</b>     | 2mL       | 2mL       | 2mL       |
| <b>Approx. Total Capacity</b> | 2mL       | 2mL       | 2mL       |
| <b>Rec. Usable Volume</b>     | 1.5mL     | 1.5mL     | 1.5mL     |
| <b>Residual Volume</b>        | <170µL    | <170µL    | <170µL    |
| <b>Composition</b>            | Glass     | Glass     | Amber     |

**11mm Wide Opening  
Crimp-Top Vials**



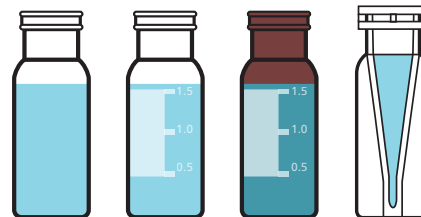
|                  |                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|------------------|
| <b>66010-539</b> | <b>46610-740</b> | <b>46610-742</b> | <b>82028-408</b> | <b>82028-410</b> |
| 2mL              | 2mL              | 2mL              | 250µL            | 250µL            |
| 2mL              | 2mL              | 2mL              | 500µL            | 500µL            |
| 1.5mL            | 1.5mL            | 1.5mL            | 350µL            | 350µL            |
| <170µL           | <170µL           | <170µL           | <2µL             | <2µL             |
| Glass            | Glass            | Amber            | Glass            | Amber            |

**11mm Standard-Opening  
Crimp Vials – 12x32mm**



|                               |           |           |           |
|-------------------------------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 66020-953 | 82028-402 | 82028-404 |
| <b>Common Description</b>     | 2mL       | 2mL       | 2mL       |
| <b>Approx. Total Capacity</b> | 2mL       | 2mL       | 2mL       |
| <b>Rec. Usable Volume</b>     | 1.5mL     | 1.5mL     | 1.5mL     |
| <b>Residual Volume</b>        | <170µL    | <170µL    | <170µL    |
| <b>Composition</b>            | Glass     | Glass     | Amber     |

**11mm Snap Vials – 12x32mm**

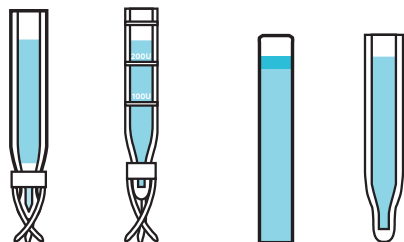


|                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|
| <b>66009-822</b> | <b>82028-414</b> | <b>82028-416</b> | <b>82028-412</b> |
| 2mL              | 2mL              | 2mL              | 250µL            |
| 2mL              | 2mL              | 2mL              | 475µL            |
| 1.5mL            | 1.5mL            | 1.5mL            | 300µL            |
| <170µL           | <170µL           | <170µL           | <2µL             |
| Glass            | Glass            | Amber            | PP               |



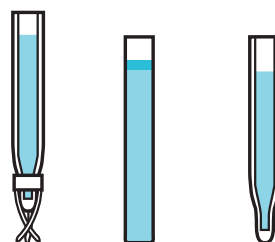
Images shown are 80% to scale

**Wide Opening Microvolume Inserts**



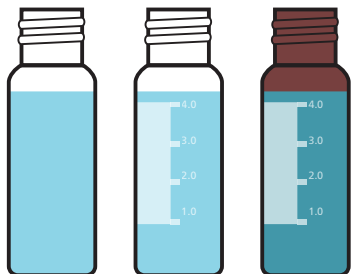
|                               |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 46610-762 | 82028-450 | 82028-454 | 82028-452 |
| <b>Common Description</b>     | 300µL     | 300µL     | 400µL     | 350µL     |
| <b>Approx. Total Capacity</b> | 375µL     | 325µL     | 500µL     | 400µL     |
| <b>Rec. Usable Volume</b>     | 300µL     | 250µL     | 400µL     | 350µL     |
| <b>Residual Volume</b>        | <1µL      | <2µL      | <25µL     | <4µL      |
| <b>Composition</b>            | Glass     | PP        | Glass     | Glass     |

**Standard Microvolume Inserts**



|                               |           |           |           |
|-------------------------------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 46610-702 | 82028-448 | 82028-446 |
| <b>Common Description</b>     | 150µL     | 200µL     | 150µL     |
| <b>Approx. Total Capacity</b> | 200µL     | 250µL     | 200µL     |
| <b>Rec. Usable Volume</b>     | 170µL     | 200µL     | 170µL     |
| <b>Residual Volume</b>        | <1µL      | <12µL     | <2µL      |
| <b>Composition</b>            | Glass     | Glass     | Glass     |

**15x45mm Screw-Thread Vials**



|                               |           |           |           |           |
|-------------------------------|-----------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 66010-562 | 82028-438 | 82028-440 | 66015-702 |
| <b>Common Description</b>     | 4mL       | 4mL       | 4mL       | 1mL       |
| <b>Approx. Total Capacity</b> | 5.2mL     | 5.2mL     | 5.2mL     | 1.25mL    |
| <b>Rec. Usable Volume</b>     | 4mL       | 4mL       | 4mL       | 1mL       |
| <b>Residual Volume</b>        | <800µL    | <800µL    | <800µL    | <80µL     |
| <b>Composition</b>            | Glass     | Glass     | Amber     | Glass     |

**Shell Vials and Inserts**



**Headspace Vials**



|                               |           |           |           |
|-------------------------------|-----------|-----------|-----------|
| <b>Cat. No.</b>               | 10119-906 | 10119-902 | 75983-244 |
| <b>Common Description</b>     | 10mL      | 20mL      | 20mL      |
| <b>Approx. Total Capacity</b> | 12mL      | 21mL      | 21mL      |
| <b>Composition</b>            | Glass     | Glass     | Glass     |





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