# VIALS & CAPS


## CRIMP NECK VIALS AND MICRO-VIALS ND8

Crimp neck vials and micro-vials ND8 are available in clear and amber first hydrolytic class glass. They can be sealed with 8 mm crimp caps, 9 mm PE caps or 8 mm push-on caps. The micro-vials often require an adapter so that they can be used in an autosampler.

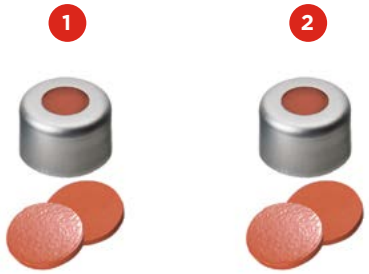
**These vials are especially used with autosamplers made by Beckman, CTC, Gilson, Knauer, Shimadzu, Spark, Varian and VWR/Hitachi.**

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 1.2 | 40 x 8.2 | 100 | 7.622 387 |
| (2) | Amber glass, flat bottom | 1.2 | 40 x 8.2 | 100 | 7.616 830 |
| (3) | Clear glass, flat bottom | 0.7 | 40 x 7 | 1000 | 7.622 388 |
| (4) | Amber glass, flat bottom | 0.7 | 40 x 7 | 1000 | 7.630 552 |
| (5) | Clear glass, round bottom | 0.3 | 31.5 x 5.5 | 1000 | 7.615 704 |
| (6) | Clear glass, conical tip | 0.2 | 31.5 x 5.5 | 1000 | 7.614 045 |
| (7) | Clear glass, conical tip | 0.6 | 40 x 7 | 1000 | 7.631 599 |
| (8) | Amber glass, conical tip | 0.6 | 40 x 7 | 1000 | 7.616 831 |
| (9) | Amber glass, conical tip | 0.4 | 30 x 7 | 100 | 7.616 832 |

## CRIMP SEALS ND8

Crimp seals ND8 are made of aluminium. They are plain lacquered with a 4 mm hole and supplied with fitted septa made of a variety of materials.

### WITH NATURAL RUBBER / TEF SEPTA




These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

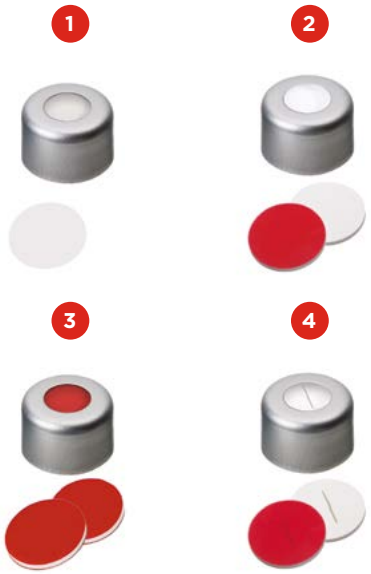
| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.0 | 100 | 7.619 110 |
| (2) | Natural rubber red-orange / TEF transparent, IM-Quality | 60° shore A | 1.0 | 100 | 7.630 551 |

### WITH REDRUBBER / PTFE SEPTA


These septa are temperature-resistant from -40 °C to 110 °C and easier to penetrate and have lower particle formation than septa made of natural rubber.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige | 45° shore A | 1.0 | 100 | 7.659 895 |

## WITH SILICONE / PTFE SEPTA




These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications. Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | PTFE virginal | 53° shore D | 0.25 | 100 | 7.615 706 |
| (2) | Silicone white / PTFE red, UltraClean | 45° shore A | 1.3 | 100 | 6.205 575 |
| (3) | PTFE red / silicone white / PTFE red | 45° shore A | 1.0 | 100 | 7.620 889 |
| (4) | Silicone white / PTFE red, slitted | 45° shore A | 1.3 | 100 | 7.616 833 |

## SPECIAL SEALS FOR CRIMP NECK ND8

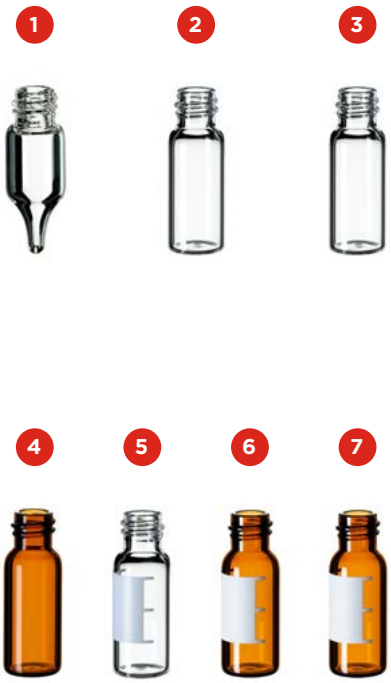

The blue Push-On caps made of PE have a thinned penetration point, but no additional septum. They are an inexpensive alternative to crimp caps for non-critical applications.

The transparent PE caps are 9 x 5.9 mm and have a 4 mm centre hole.

Septa made of natural rubber are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | PE Push-On cap, blue, thinned penetration point | | | 100 | 7.616 836 |
| (2) | PE cap, transparent, natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.616 837 |

Suitable LABSOLUTE® crimping tools are listed from page 221




## SCREW NECK VIALS AND MICRO-VIALS ND8, SMALL OPENING

Screw neck vials and micro-vials ND8 are available in clear and amber first hydrolytic class glass. They have a 8-425 thread and are used as standard in GC and HPLC applications. A large selection of micro-inserts with a 5 mm diameter is available for these vials. The micro-vials often require an adapter so that they can be used in an autosampler.

**These vials are especially used with autosamplers made by Beckman, Shimadzu, Spark, Varian and VWR/Hitachi.**

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, conical tip | 1.1 | 32 x 11.6 | 100 | 7.631 774 |
| (2) | Clear glass, flat bottom* | 1.5 | 32 x 11.6 | 100 | 6.401 175 |
| (3) | Clear glass, flat bottom “silanized” | 1.5 | 32 x 11.6 | 100 | 7.677 377 |
| (4) | Amber glass, flat bottom* | 1.5 | 32 x 11.6 | 100 | 7.615 163 |
| (5) | Clear glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.613 087 |
| (6) | Amber glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.613 388 |
| (7) | Amber glass, flat bottom “silanized” | 1.5 | 32 x 11.6 | 100 | 7.648 597 |

* Especially suitable for VWR (Merck®) / Hitachi instruments


## MICRO-INSERTS FOR SCREW NECK VIALS ND8, SMALL OPENING

Micro-inserts made of clear first hydrolytic class glass are suitable for screw neck vials ND8 with small opening.

| Type | Description | Usable volume µl | Nominal volume µl | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Clear glass, conical tip 15 mm** | 150 | 200 | 31 x 5 | 1000 | 7.613 389 |
| (2) | Clear glass, conical tip 9 mm | 200 | 250 | 31 x 5 | 1000 | 7.616 846 |
| (3) | Clear glass, conical tip, with polymer foot | 150 | 200 | 29 x 5 | 1000 | 7.614 073 |
| (4) | Clear glass, flat bottom | 260 | 300 | 31 x 5 | 1000 | 7.616 845 |
| (5) | Clear glass, conical tip* | 110 | 200 | 27.5 x 4 | 1000 | 7.632 176 |
| (6) | Metal spring | | | 36 x 5 | 100 | 7.632 175 |

* Metal spring 7.632 175 required

** Especially suitable for VWR (Merck®) / Hitachi instruments

## SCREW SEALS ND8

Screw seals ND8 are made of PP and are supplied without or with fitted septa made of a variety of materials. They have a 8-425 thread, a 5.5 mm centre hole or are closed.

### WITH NATURAL RUBBER / TEF SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

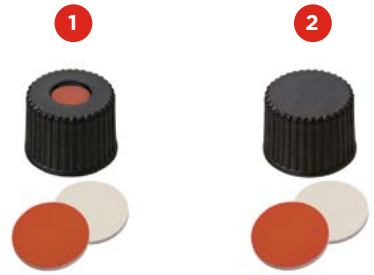
| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent* | 60° shore A | 1.3 | 100 | 7.612 928 |
| (2) | Natural rubber red-orange / TEF transparent, closed | 60° shore A | 1.3 | 100 | 6.802 991 |

* Especially suitable for VWR (Merck®) / Hitachi instruments


### WITH REDRUBBER / PTFE SEPTA

These septa are temperature-resistant from -40 °C to 110 °C and easier to penetrate and have lower particle formation than septa made of natural rubber.

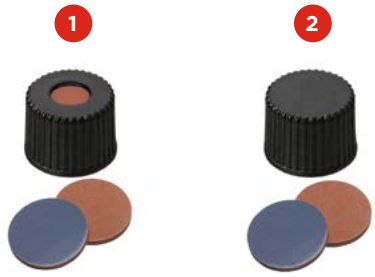
| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige | 45° shore A | 1.3 | 100 | 7.654 401 |
| (2) | RedRubber / PTFE beige, closed | 45° shore A | 1.3 | 100 | 7.659 896 |




### WITH BUTYL / PTFE SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties with regard to cleanliness.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Butyl red / PTFE grey | 55° shore A | 1.3 | 100 | 7.616 773 |
| (2) | Butyl red / PTFE grey, closed | 55° shore A | 1.3 | 100 | 7.616 149 |




## WITH SILICONE / PTFE SEPTA

These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications. Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone cream / PTFE red, UltraClean | 55° shore A | 1.5 | 100 | 7.630 256 |
| (2) | Silicone white / PTFE red, UltraClean | 45° shore A | 1.3 | 100 | 7.604 778 |
| (3) | Silicone white / PTFE red, UltraClean, closed | 45° shore A | 1.3 | 100 | 7.621 679 |
| (4) | Silicone blue transparent / PTFE white | 45° shore A | 1.3 | 100 | 7.613 320 |
| (5) | Silicone dark blue / PTFE white | 45° shore A | 1.3 | 100 | 7.631 775 |
| (6) | Silicone white / PTFE red, slitted | 45° shore A | 1.3 | 100 | 7.614 038 |
| (7) | PTFE red / silicone white / PTFE red | 45° shore A | 1.0 | 100 | 7.630 523 |


## WITH VITON SEPTA

Septa made from Viton have a very high resistance against a wide range of solvents. These septa are highly recommended for use with chlorinated solvents.
Viton septa are not suitable for multiple injections or high injection speeds.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Viton 1A black | 70° shore A | 1.5 | 100 | 7.646 553 |


## WITHOUT SEPTA

Suitable septa with a diameter of 8 mm made of different materials are available on request.

| Type | Description | PK | Art. no. |
|---|---|---|---|
| (1) | Screw cap, black* | 100 | 6.051 375 |
| (2) | Screw cap, black, closed | 100 | 7.621 592 |
| (3) | Screw cap, white | 100 | 7.613 312 |
| (4) | Screw cap, white, closed | 100 | 7.639 608 |

* Especially suitable for VWR (Merck®) / Hitachi instruments

## KITS ND8

The LABSOLUTE® kits ND8 contain shrink-wrapped screw vials ND8 with small opening made of clear or amber first hydrolytic class glass and corresponding screw caps made of PP. In some cases, caps are already pre-screwed on the vials.

- Many kits are especially adjusted for use with an autosampler of one defined manufacturer
- Kits with pre-screwed seals reduce the risk of sample contamination
- Kits with pre-assembled micro inserts are available on request

| Description | Capacity ml | For Sampler | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, black cap, 5.5 mm hole, natural rubber red-orange / TEF transparent, 60° shore A, 1.3 mm | 1.5 | Merck®/Hitachi | 100 | 7.618 022 |
| Clear glass, black cap, 5.5 mm hole, silicone white / PTFE blue, 55° shore A, 0.9 mm, slitted | 1.5 | Merck®/Hitachi | 100 | 7.621 198 |
| Clear glass, small opening, black cap, 5.5 mm hole, **pre-screwed**, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | Merck®/Hitachi | 100 | 7.647 530 |
| Clear glass, black cap, 5.5 mm hole, **pre-screwed**, silicone white / PTFE blue, 55° shore A, 0.9 mm, slitted | 1.5 | Merck®/Hitachi | 100 | 7.632 650 |
| Clear glass, black cap, 5.5 mm hole, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | Varian | 100 | 7.629 515 |
| Clear glass, label and filling lines, black cap, 5.5 mm hole, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | Varian | 100 | 9.003 559 |
| Amber glass, black cap, 5.5 mm hole, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | Varian | 100 | 9.003 557 |
| Amber glass, label and filling lines, black cap, 5.5 mm hole, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | Varian | 100 | 9.003 558 |

Further LABSOLUTE® ND8 vials, caps, septa and kits available on request


## SHORT THREAD VIALS AND MICRO-VIALS ND9, WIDE OPENING

Short thread vials and micro-vials ND9 are available in clear and amber first hydrolytic class glass and can be used on almost all autosamplers. You can replace other 1.5 ml vial Types like 11 mm crimp neck vials, 8-425 and 10-425 screw neck vials, which can help rationalize stocks.

The wide opening requires matching micro-inserts with 6 mm diameter.

**Due to the technical geometry, the vails can be used on all common autosamplers, but preferentially on instruments made by Agilent, HTA, Shimadzu, Thermo Scientific, Varian and Waters.**

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom, with integrated micro-insert, with label | 0.2 | 32 x 11.6 | 100 | 7.616 849 |
| (2) | Amber glass, flat bottom, with integrated micro-insert, with label | 0.2 | 32 x 11.6 | 100 | 7.660 024 |
| (3) | Clear glass, flat bottom, with integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.629 622 |
| (4) | Amber glass, flat bottom, with integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.648 146 |
| (5) | Amber glass, flat bottom, with integrated micro-insert, with label “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.647 478 |
| (6) | Clear glass, flat bottom, with inner cone | 0.9 | 32 x 11.6 | 100 | 7.677 368 |
| (7) | Clear glass, flat bottom, with inner cone | 1.1 | 32 x 11.6 | 100 | 7.616 848 |
| (8) | Clear glass, flat bottom, with inner cone “silanized” | 1.1 | 32 x 11.6 | 100 | 7.648 599 |
| (9) | Amber glass, flat bottom, with inner cone | 1.1 | 32 x 11.6 | 100 | 7.647 480 |
| (10) | Clear glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.663 231 |
| (11) | Clear glass, flat bottom “silanized” | 1.5 | 32 x 11.6 | 100 | 7.630 175 |
| (12) | Amber glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.663 233 |
| (13) | Clear glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.663 232 |
| (14) | Clear glass, flat bottom, with label “silanized” | 1.5 | 32 x 11.6 | 100 | 7.643 512 |
| (15) | Amber glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.645 571 |
| (16) | Amber glass, flat bottom, with label “silanized” | 1.5 | 32 x 11.6 | 100 | 7.616 003 |

## MICRO-INSERTS FOR VIALS WITH WIDE OPENING, GLASS

The micro-inserts made of first hydrolytic class glass are suitable for

- Short thread vials ND9, with wide opening made of glass or plastic
- Screw neck vials ND10, with wide opening
- Crimp neck vials ND11, with wide opening
- Snap ring vials ND11, with wide opening
- Shell vials, with a nominal volume of 2 ml

The micro-inserts with polymer foot are not suitable for shell vials.


| Type | Description | Usable volume µl | Nominal volume µl | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Clear glass, conical tip 15 mm | 250 | 340 | 31 x 6 | 1000 | 7.615 290 |
| (2) | Clear glass, conical tip 15 mm "silanized" | 250 | 340 | 31 x 6 | 1000 | 7.616 933 |
| (3) | Clear glass, conical tip 12 mm | 300 | 350 | 31 x 6 | 1000 | 7.620 929 |
| (4) | Clear glass, conical tip, with polymer foot | 250 | 300 | 29 x 5.7 | 1000 | 7.614 088 |
| (5) | Clear glass, conical tip, with polymer foot "silanized" | 250 | 300 | 29 x 5.7 | 1000 | 7.615 561 |
| (6) | Clear glass, flat bottom | 350 | 500 | 31 x 6 | 1000 | 6.803 175 |
| (7) | Clear glass, flat bottom "silanized" | 350 | 500 | 31 x 6 | 1000 | 7.646 457 |

## SHORT THREAD VIALS AND MICRO-VIALS ND9, PMP OR PP

Short thread vials and micro-vials ND9 with wide opening made of natural or amber PMP or PP are a shatterproof alternative to glass vials.


| Type | Description | Capacity ml | Material | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Clear, flat bottom, with glass micro-insert, TopSert | 0.2 | PMP | 32 x 11.6 | 100 | 7.631 401 |
| (2) | Clear, flat bottom, with glass micro-insert, TopSert "silanized" | 0.2 | PMP | 32 x 11.6 | 100 | 7.616 934 |
| (3) | Amber, flat bottom, with glass micro-insert, TopSert | 0.2 | PMP | 32 x 11.6 | 100 | 7.616 850 |
| (4) | Amber, flat bottom, with glass micro-insert, TopSert "silanized" | 0.2 | PMP | 32 x 11.6 | 100 | 7.616 935 |
| (5) | Clear, flat bottom | 0.3 | PMP | 32 x 11.6 | 100 | 7.616 859 |
| (6) | Clear, flat bottom | 0.3 | PP | 32 x 11.6 | 100 | 7.618 897 |
| (7) | Amber, flat bottom | 0.3 | PP | 32 x 11.6 | 100 | 7.631 798 |
| (8) | Clear, flat bottom | 0.7 | PP | 32 x 11.6 | 100 | 7.618 914 |
| (9) | Clear, flat bottom, with filling lines | 1.5 | PP | 32 x 11.6 | 100 | 6.205 647 |
| (10) | Amber, flat bottom, with filling lines | 1.5 | PP | 32 x 11.6 | 100 | 7.616 851 |

## MICRO-INSERTS FOR VIALS WITH WIDE OPENING, PP


The micro-inserts made of transparent PP are suitable for

- Short thread vials ND9, with wide opening made of glass or plastic
- Screw neck vials ND10, with wide opening
- Crimp neck vials ND11, with wide opening
- Snap ring vials ND11, with wide opening
- Shell vials, with a nominal volume of 2 ml

The micro-inserts with polymer foot are not suitable for shell vials.

| Type | Description | Usable volume µl | Nominal volume µl | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | PP, transparent, conical tip 10 mm | 250 | 300 | 29 x 6 | 1000 | 7.654 481 |
| (2) | PP, transparent, conical tip, with polymer foot | 250 | 300 | 29 x 6 | 1000 | 7.648 594 |

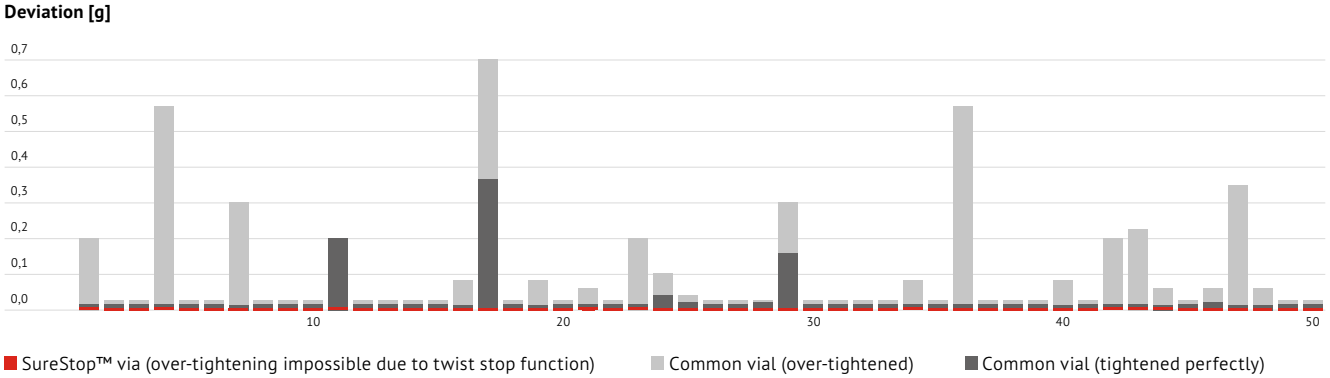
## SHORT THREAD VIALS AND MICRO-VIALS ND9, SURESTOP™


The short thread vials ND9 SureStop™ are available in clear and amber first hydrolytic class glass and are the best available on the market in terms of seal tightness and reliability. The vials have an additional stopper ring at the end of the thread which clearly marks the end point in the screwing-in process. This ensures that the tightness of the seal is independent of the touch or feel of the user screwing the stopper in. This ensures the lowest possible number of standard deviations and high reproducibility of analysis results.

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.639 476 |
| (2) | Clear glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.639 477 |
| (3) | Amber glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.639 478 |

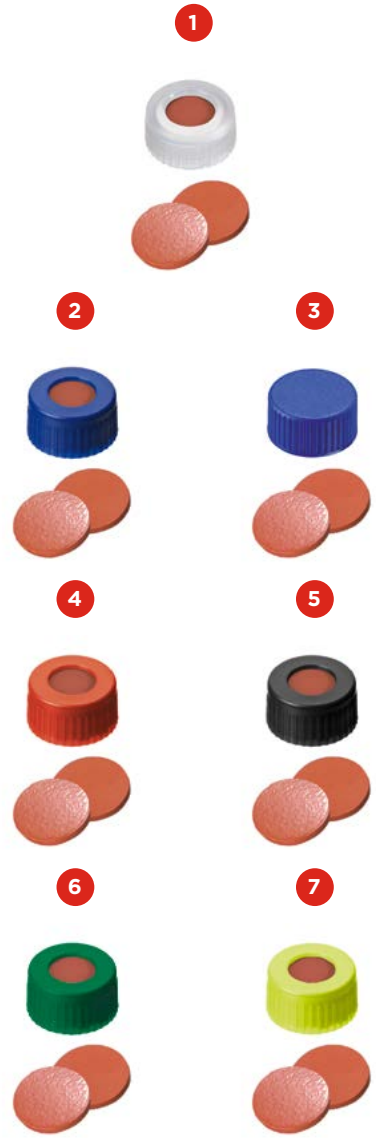
## SEAL TIGHTNESS STUDY

50 short thread vials and short thread SureStop™ vials were screwed or screwed and over-tightened by multiple test subjects. After 24 hours, the volume of evaporated solvent (methanol) was measured.



## SHORT THREAD SCREW SEALS ND9

Short thread screw seals ND9 are made of PP and are supplied with fitted septa made of a variety of materials. They have a 6 mm centre hole and are available in different colours. The screw caps are similar in shape to the crimp caps and are therefore also suitable for robotic handling.

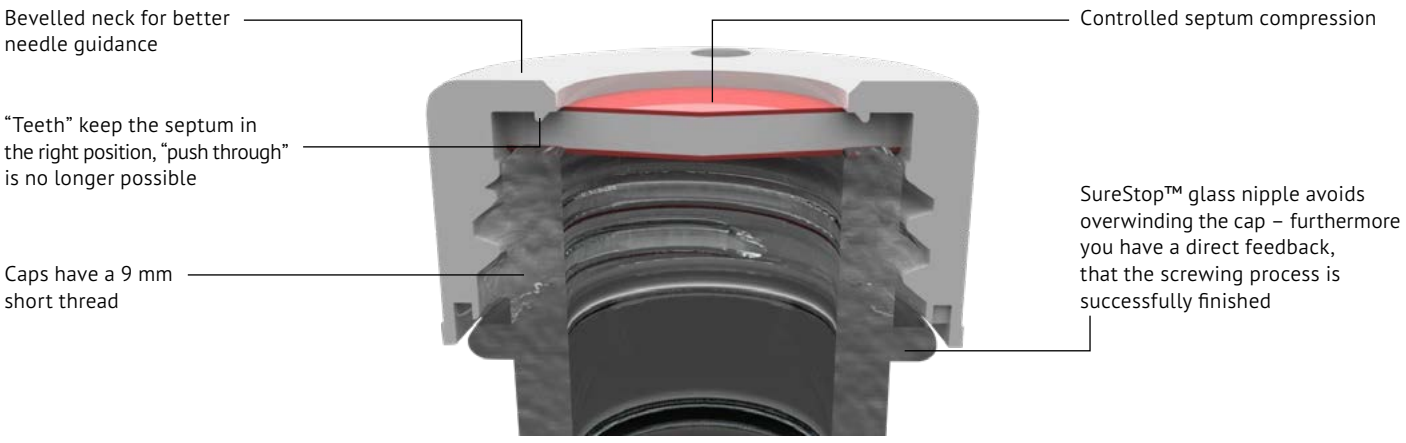


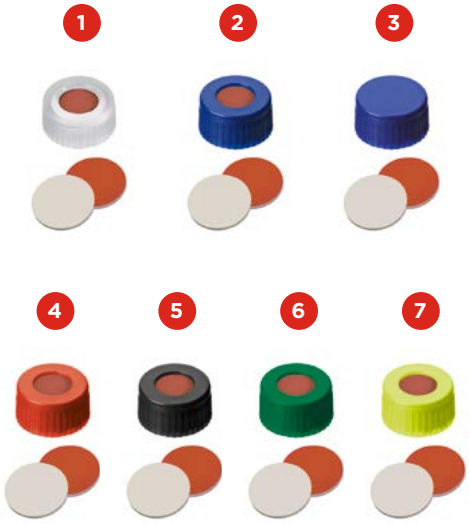

### WITH NATURAL RUBBER / TEF SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and are ideal for multiple injections thanks to their excellent resealability properties.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent, transparent cap | 60° shore A | 1.0 | 100 | 6.088 872 |
| (2) | Natural rubber red-orange / TEF transparent, blue cap | 60° shore A | 1.0 | 100 | 7.663 239 |
| (3) | Natural rubber red-orange / TEF transparent, blue cap, closed | 60° shore A | 1.0 | 100 | 7.618 912 |
| (4) | Natural rubber red-orange / TEF transparent, red cap | 60° shore A | 1.0 | 100 | 7.621 157 |
| (5) | Natural rubber red-orange / TEF transparent, black cap | 60° shore A | 1.0 | 100 | 7.616 538 |
| (6) | Natural rubber red-orange / TEF transparent, green cap | 60° shore A | 1.0 | 100 | 7.631 765 |
| (7) | Natural rubber red-orange / TEF transparent, yellow cap | 60° shore A | 1.0 | 100 | 7.616 729 |

### A DEVELOPMENT FOR YOUR SAFETY – SURESTOP™-VIALS

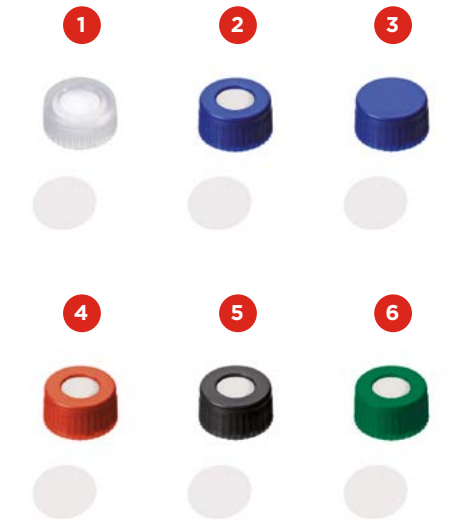





## WITH REDRUBBER / PTFE SEPTA

These septa are temperature-resistant from -40 °C to 110 °C. They are easier to penetrate and have lower particle formation than septa made of natural rubber.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige, transparent cap | 45° shore A | 1.0 | 100 | 7.636 712 |
| (2) | RedRubber / PTFE beige, blue cap | 45° shore A | 1.0 | 100 | 7.663 240 |
| (3) | RedRubber / PTFE beige, blue cap, closed | 45° shore A | 1.0 | 100 | 7.646 874 |
| (4) | RedRubber / PTFE beige, red cap | 45° shore A | 1.0 | 100 | 7.651 190 |
| (5) | RedRubber / PTFE beige, black cap | 45° shore A | 1.0 | 100 | 7.654 495 |
| (6) | RedRubber / PTFE beige, green cap | 45° shore A | 1.0 | 100 | 7.634 402 |
| (7) | RedRubber / PTFE beige, yellow cap | 45° shore A | 1.0 | 100 | 7.636 713 |




## WITH PURE PTFE SEPTA

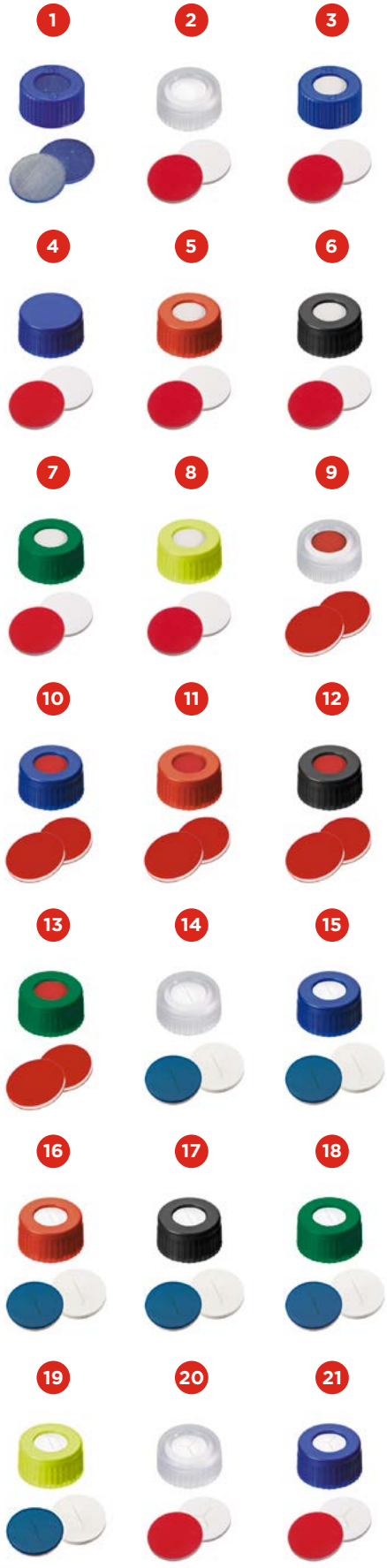
These septa are temperature-resistant from -200 °C to 260 °C. They are very thin and hard and characterized by high analytical purity. However, they have less effective resealability properties and are therefore only suitable for single-injection applications.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | PTFE virginal, transparent cap | 53° shore D | 0.2 | 100 | 7.612 019 |
| (2) | PTFE virginal, blue cap | 53° shore D | 0.2 | 100 | 7.612 018 |
| (3) | PTFE virginal, blue cap, closed | 53° shore D | 0.2 | 100 | 7.618 911 |
| (4) | PTFE virginal, red cap | 53° shore D | 0.2 | 100 | 7.646 560 |
| (5) | PTFE virginal, black cap | 53° shore D | 0.2 | 1000 | 6.238 920 |
| (6) | PTFE virginal, green cap | 53° shore D | 0.2 | 100 | 7.646 561 |

## WITH SILICONE / PTFE SEPTA

These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications. Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone dark-blue transparent / PTFE natural, transparent cap | 35° shore A | 1.0 | 100 | 7.646 562 |
| (2) | Silicone white / PTFE red, UltraClean, transparent cap | 55° shore A | 1.0 | 100 | 7.612 027 |
| (3) | Silicone white / PTFE red, UltraClean, blue cap | 55° shore A | 1.0 | 100 | 7.663 241 |
| (4) | Silicone white / PTFE red, UltraClean, blue cap, closed | 55° shore A | 1.0 | 100 | 7.633 658 |
| (5) | Silicone white / PTFE red, UltraClean, red cap | 55° shore A | 1.0 | 100 | 7.630 473 |
| (6) | Silicone white / PTFE red, UltraClean, black cap | 55° shore A | 1.0 | 100 | 7.616 539 |
| (7) | Silicone white / PTFE red, UltraClean, green cap | 55° shore A | 1.0 | 100 | 7.618 875 |
| (8) | Silicone white / PTFE red, UltraClean, yellow cap | 55° shore A | 1.0 | 100 | 7.617 539 |
| (9) | PTFE red / silicone white / PTFE red, transparent cap | 45° shore A | 1.0 | 100 | 7.630 691 |
| (10) | PTFE red / silicone white / PTFE red, blue cap | 45° shore A | 1.0 | 100 | 7.615 823 |
| (11) | PTFE red / silicone white / PTFE red, red cap | 45° shore A | 1.0 | 100 | 7.630 477 |
| (12) | PTFE red / silicone white / PTFE red, black cap | 45° shore A | 1.0 | 100 | 7.616 853 |
| (13) | PTFE red / silicone white / PTFE red, green cap | 45° shore A | 1.0 | 100 | 7.636 888 |
| (14) | Silicone white / PTFE blue, slitted, transparent cap | 55° shore A | 1.0 | 100 | 7.615 326 |
| (15) | Silicone white / PTFE blue, slitted, blue cap | 55° shore A | 1.0 | 100 | 7.645 303 |
| (16) | Silicone white / PTFE blue, slitted, red cap | 55° shore A | 1.0 | 100 | 7.616 852 |
| (17) | Silicone white / PTFE blue, slitted, black cap | 55° shore A | 1.0 | 100 | 7.616 854 |
| (18) | Silicone white / PTFE blue, slitted, green cap | 55° shore A | 1.0 | 100 | 7.643 812 |
| (19) | Silicone white / PTFE blue, slitted, yellow cap | 55° shore A | 1.0 | 100 | 7.677 363 |
| (20) | Silicone white / PTFE red, pre-cut (Y), transparent cap | 55° shore A | 1.0 | 100 | 7.654 493 |
| (21) | Silicone white / PTFE red, pre-cut (Y), blue cap | 55° shore A | 1.0 | 100 | 7.654 494 |



## WITH SILICONE / PTFE SEPTA, MAGNETIC

These short thread screw seals have a mounted magnetic sleeve (gold colour). They are more convenient and secure to handle than 11 mm magnetic crimp seals. The septa are temperature-resistant from -60 °C to 200 °C. The caps have been officially tested and approved for CTC.

1

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / PTFE red, UltraClean | 55° shore A | 1.0 | 100 | 7.618 913 |
| | Silicone white / PTFE blue, slitted | 55° shore A | 1.0 | 100 | 7.673 794 |

## WITH VITON SEPTA

1

Septa made of Viton have a very high resistance against a wide range of solvents.
These septa are highly recommended for use with chlorinated solvents.
Viton septa are not suitable for multiple injections or high injection speeds.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Viton 1A black, transparent cap | 70° shore A | 1.0 | 100 | 7.616 025 |

## SHORT THREAD SCREW SEALS ND9, ULTRABOND

Short thread screw seals ND9 are made of PP and are supplied with fitted septa made of a variety of materials. The caps have a 6 mm centre hole and are available in different colours. The screw caps are similar in shape to the crimp caps and are therefore also suitable for robotic handling.

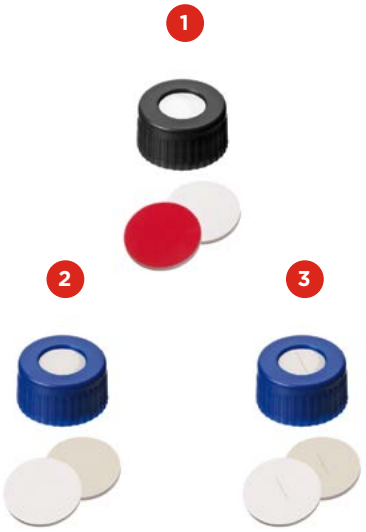
In this case, caps and septa form an inseparable unit (Ultrabond), which means that even a blunt needle is unable to push the septa into the vial.

### WITH REDRUBBER / PTFE SEPTA, ULTRABOND


These septa are temperature-resistant from -40 °C to 110 °C. They are easier to penetrate and have lower particle formation than septa made of natural rubber.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige, blue cap | 45° shore A | 1.0 | 100 | 7.646 374 |

### WITH SILICONE / PTFE SEPTA, ULTRABOND




These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / PTFE red, black cap | 45° shore A | 1.3 | 100 | 7.616 855 |
| (2) | Silicone beige / PTFE white, blue cap | 45° shore A | 1.3 | 100 | 7.616 856 |
| (3) | Silicone beige / PTFE white, slitted, blue cap | 45° shore A | 1.3 | 100 | 7.616 857 |

## MS SHORT THREAD SCREW SEAL ND9


This transparent seal is certified for GC/MS and LC/MS applications. It has a thinned penetration area and a diaphragm. There is no bleeding, and the seal is fully inert. Therefore a contamination of the sample is impossible. Nevertheless the screw cap is as easy to penetrate as a normal septum and just as tight.

| Type | Description | PK | Art. no. |
|---|---|---|---|
| (1) | MS short thread screw cap, transparent | 100 | 7.618 910 |

## KITS ND9

The LABSOLUTE® kits ND9 contain shrink-wrapped short thread vials ND9 made of clear or amber first hydrolytic class glass and corresponding short thread screw caps made of PP.

Kits containing Ultrabond seals are especially for the use with Waters autosamplers.

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, transparent caps, 6 mm centre hole, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 7.620 724 |
| Clear glass, blue caps, 6 mm centre hole, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 7.614 249 |
| Clear glass, transparent caps, 6 mm centre hole, silicone white / PTFE red, 55° shore A, 1.0 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 9.003 561 |
| Clear glass, blue caps, 6 mm centre hole, silicone white / PTFE red, 55° shore A, 1.0 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 9.003 560 |
| Clear glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE red, 55° shore A, 1.0 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 7.661 859 |
| Amber glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE red, 55° shore A, 1.0 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 7.614 414 |
| Clear glass, blue caps, 6 mm centre hole, PTFE red / silicone white / PTFE red, 45° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 7.647 533 |
| Clear glass, blue caps, 6 mm centre hole, silicone white / PTFE blue, 55° shore A, 1.0 mm, slitted | 1.5 | 32 x 11.6 | 100 | 7.621 765 |
| Clear glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE blue, 55° shore A, 1.0 mm, slitted | 1.5 | 32 x 11.6 | 100 | 7.651 823 |
| Amber glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE blue, 55° shore A, 1.0 mm, slitted | 1.5 | 32 x 11.6 | 100 | 7.647 534 |
| PP, transparent, blue caps, 6 mm centre hole, silicone white / PTFE blue, 55° shore A, 1.0 mm, slitted | 0.3 | 32 x 11.6 | 100 | 7.620 723 |
| PP, transparent, blue caps, 6 mm centre hole, silicone beige / PTFE white, 45° shore A, 1.3 mm, slitted, Ultrabond | 0.3 | 32 x 11.6 | 100 | 7.638 940 |
| Amber glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE beige, 45° shore A, 1.3 mm, slitted | 1.5 | 32 x 11.6 | 100 | 9.003 563 |
| Clear glass, blue caps, 6 mm centre hole, silicone white / PTFE beige, 45° shore A, 1.3 mm, Ultrabond, manufacturer quality | 1.5 | 32 x 11.6 | 100 | 7.643 632 |
| Clear glass, blue caps, 6 mm centre hole, silicone white / PTFE beige, 45° shore A, 1.3 mm, slitted, Ultrabond, manufacturer quality | 1.5 | 32 x 11.6 | 100 | 7.643 625 |
| Amber glass, blue caps, 6 mm centre hole, silicone white / PTFE beige, 45° shore A, 1.3 mm, Ultrabond, manufacturer quality | 1.5 | 32 x 11.6 | 100 | 7.643 633 |
| Clear glass, with label, blue caps, 6 mm centre hole, silicone beige / PTFE white, 45° shore A, 1.3 mm, Ultrabond | 1.5 | 32 x 11.6 | 100 | 7.638 941 |
| Clear glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE beige, 45° shore A, 1.3 mm, slitted, Ultrabond, manufacturer quality | 1.5 | 32 x 11.6 | 100 | 6.266 923 |

## KITS ND9, CERTIFIED

These kits correspond to the standard ND9 kits with regard to their setup (shrink-wrapped short thread vials ND9 made of clear or amber first hydrolytic class glass with corresponding short thread screw caps made of PP). But there is a batch-specific test certificate with HPLC and GC chromatographs for every kit available on request. Certified kits are delivered completely shrink-wrapped. This means additional safety for the end user.

Each batch of HPLC and GC certified kits is tested on 15 critical parameters.
In a method corresponding as far as possible to real laboratory conditions, an HPLC/UV and GC/MS test of a vial and seal combination will be carried out.

Kits containing Ultrabond seals are especially for the use with Waters autosamplers.

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE red, 55° shore A, 1.0 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 7.658 886 |
| Amber glass, with label, blue caps, 6 mm centre hole, silicone white / PTFE red, 55° shore A, 1.0 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 7.658 887 |
| Clear glass, with label, blue caps, 6 mm centre hole, silicone beige / PTFE white, slitted, 45° shore A, 1.3 mm, Ultrabond | 1.5 | 32 x 11.6 | 100 | 7.644 568 |

**BATCH SPECIFIC CERTIFICATION**

Test certificates available on request

Further LABSOLUTE® ND9 vials, caps, septa and kits available on request


## SCREW NECK VIALS AND MICRO-VIALS ND10, WIDE OPENING

Screw neck vials ND10 with 10-425 thread facilitate easy filling with viscous substances thanks to their wide opening. The vials are available in clear and amber first hydrolytic class glass.

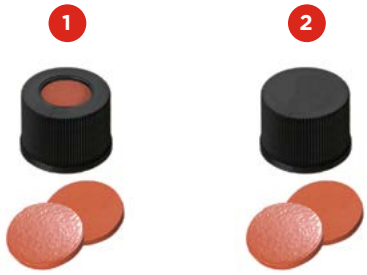
| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.615 291 |
| (2) | Amber glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.677 365 |
| (3) | Clear glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.615 715 |
| (4) | Amber glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.621 171 |

Suitable LABSOLUTE® micro inserts are listed on page 179–180

## SCREW SEALS ND10

Screw seals ND10 are made of PP and have a 10-425 thread. They have a 7 mm centre hole or are closed. Screw seals are supplied with fitted septa made of a variety of materials or without any septa.

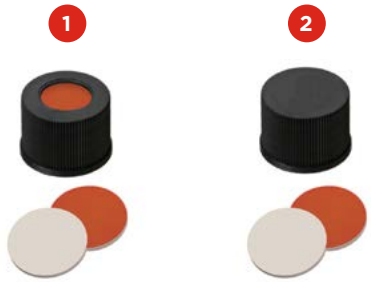
### WITH NATURAL RUBBER / TEF SEPTA




These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.615 292 |
| (2) | Natural rubber red-orange / TEF transparent, closed | 60° shore A | 1.3 | 100 | 7.618 915 |

### WITH REDRUBBER / PTFE SEPTA




These septa are temperature-resistant from -40 °C to 110 °C and easier to penetrate and have lower particle formation than septa made of natural rubber.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige | 45° shore A | 1.3 | 100 | 7.646 569 |
| (2) | RedRubber / PTFE beige, closed | 45° shore A | 1.3 | 100 | 7.670 616 |

## WITH SILICONE / PTFE SEPTA


These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / PTFE red, UltraClean | 45° shore A | 1.3 | 100 | 7.631 600 |
| (2) | Silicone white / PTFE beige | 45° shore A | 1.5 | 100 | 7.621 568 |
| (3) | PTFE red / silicone white / PTFE red | 45° shore A | 1.0 | 100 | 7.615 766 |
| (4) | Silicone white / PTFE blue, slitted | 55° shore A | 1.5 | 100 | 7.615 716 |

## WITHOUT SEPTA


Suitable septa with a diameter of 10 mm made of different materials are available on request.

| Type | Description | PK | Art. no. |
|---|---|---|---|
| (1) | Screw cap, black | 100 | 7.615 719 |
| (2) | Screw cap, black, closed | 100 | 7.677 364 |


## CRIMP NECK VIALS AND MICRO-VIALS ND11, WIDE OPENING

Crimp neck vials and micro-vials ND11 made of clear and amber first hydrolytic class glass are used as standard in GC and HPLC. A large selection of micro-inserts is available for these vials.

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.663 226 |
| (2) | Clear glass, flat bottom “silanized” | 1.5 | 32 x 11.6 | 100 | 7.677 379 |
| (3) | Clear glass, flat bottom | 2.5 | 41 x 11.6 | 100 | 7.677 367 |
| (4) | Amber glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.663 230 |
| (5) | Clear glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.663 229 |
| (6) | Amber glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.664 225 |
| (7) | Amber glass, flat bottom, with label “silanized” | 1.5 | 32 x 11.6 | 100 | 7.647 476 |
| (8) | Clear glass, flat bottom, small opening | 1.5 | 32 x 11.6 | 100 | 7.620 829 |
| (9) | Clear glass, flat bottom, integrated micro-insert, with label “Top Bonded” | 0.2 | 32 x 11.6 | 100 | 7.620 898 |
| (10) | Amber glass, flat bottom, integrated micro-insert, with label “Top Bonded” | 0.2 | 32 x 11.6 | 100 | 7.651 116 |
| (11) | Clear glass, flat bottom, integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.648 519 |
| (12) | Amber glass, flat bottom, integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.648 520 |
| | Amber glass, flat bottom, with label, with integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.647 479 |
| (13) | Clear glass, flat bottom, with inner cone | 1.1 | 32 x 11.6 | 100 | 7.616 019 |
| (14) | Clear glass, flat bottom, with inner cone “silanized” | 1.1 | 32 x 11.6 | 100 | 7.677 376 |
| (15) | Clear glass, conical | 0.9 | 32 x 10 | 100 | 7.621 337 |
| (16) | Clear glass, conical | 1.1 | 32 x 11.6 | 100 | 7.632 401 |

Suitable LABSOLUTE® micro inserts are listed on page 179–180

## CRIMP SEALS ND11

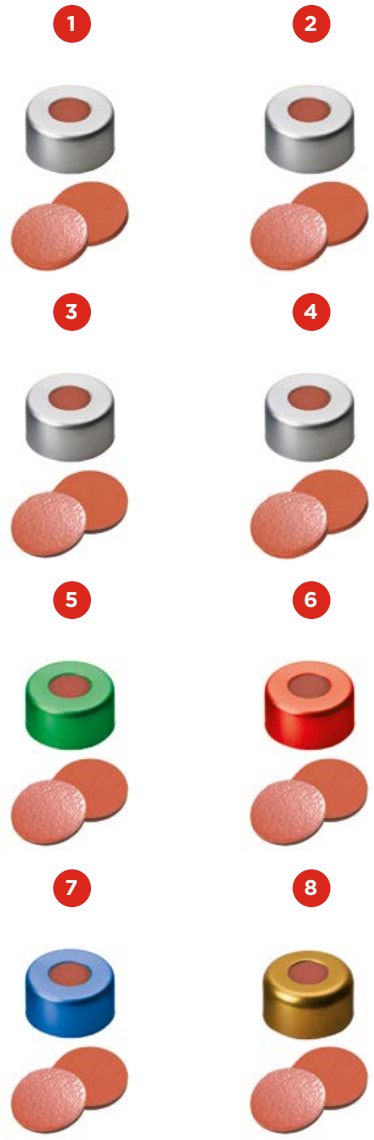
Crimp seals ND11 are made of aluminium. They are clear or lacquered in different colours and have a 5.5 mm hole. They are supplied with fitted septa made of a variety of materials.

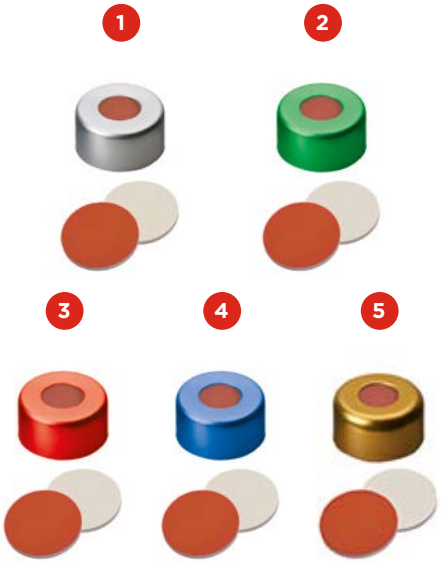
### WITH NATURAL RUBBER / TEF SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

Septa made of natural rubber / butyl / TEF combine the good physical properties of natural rubber (resealability) and the good chemical properties of butyl (analytical cleanliness).

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent, IM quality, clear cap | 60° shore A | 1.0 | 100 | 7.608 142 |
| (2) | Natural rubber red-orange / TEF transparent, clear cap | 60° shore A | 1.0 | 100 | 7.647 473 |
| (3) | Natural rubber red-orange / TEF transparent, clear cap | 45° shore A | 1.0 | 100 | 7.608 161 |
| (4) | Natural rubber red-orange / butyl red / TEF transparent, clear cap | 60° shore A | 1.3 | 100 | 7.618 902 |
| (5) | Natural rubber red-orange / butyl red / TEF transparent, green cap | 45° shore A | 1.0 | 100 | 7.631 300 |
| (6) | Natural rubber red-orange / butyl red / TEF transparent, red cap | 45° shore A | 1.0 | 100 | 7.631 301 |
| (7) | Natural rubber red-orange / butyl red / TEF transparent, blue cap | 45° shore A | 1.0 | 100 | 7.615 164 |
| (8) | Natural rubber red-orange / butyl red / TEF transparent, gold cap | 45° shore A | 1.0 | 100 | 7.617 087 |

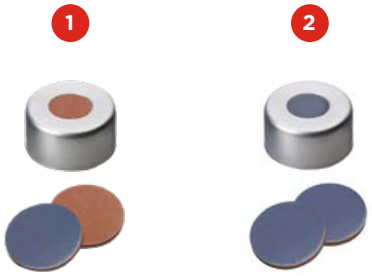





## WITH REDRUBBER / PTFE SEPTA

These septa with instrument manufacturer's quality are temperature-resistant from -40 °C to 110 °C. They are easier to penetrate and have lower particle formation than septa made of natural rubber.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE transparent, clear cap | 45° shore A | 1.0 | 100 | 7.663 236 |
| (2) | RedRubber / PTFE beige, green cap | 45° shore A | 1.0 | 1000 | 7.671 640 |
| (3) | RedRubber / PTFE beige, red cap | 45° shore A | 1.0 | 1000 | 7.671 641 |
| (4) | RedRubber / PTFE beige, blue cap | 45° shore A | 1.0 | 1000 | 7.671 642 |
| (5) | RedRubber / PTFE beige, gold cap | 45° shore A | 1.0 | 100 | 7.677 380 |




## WITH BUTYL / PTFE SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Butyl red / PTFE grey, clear cap | 55° shore A | 1.3 | 100 | 7.616 840 |
| (2) | PTFE grey / butyl red / PTFE grey, clear cap | 55° shore A | 1.3 | 100 | 7.615 681 |

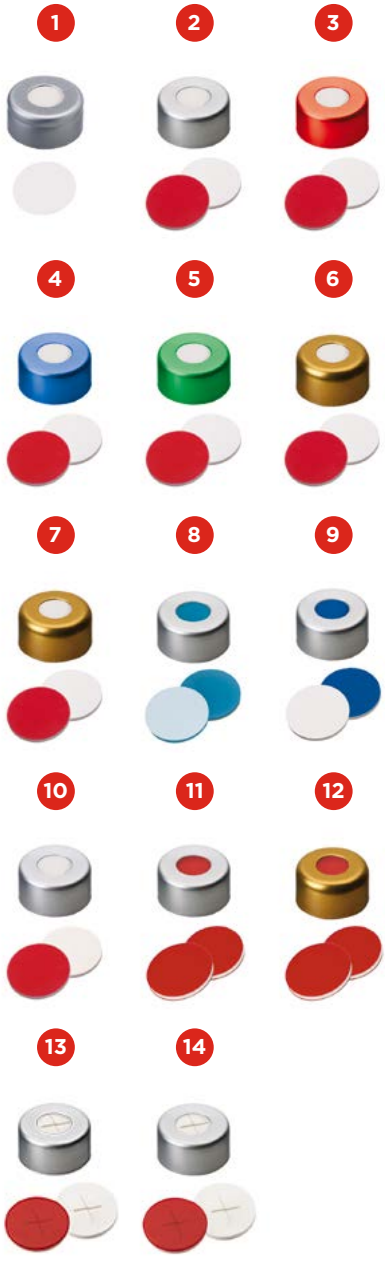
## WITH SILICONE / PTFE SEPTA

These septa are temperature-resistant from -60 °C to 200 °C and have a better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.

**The magnetic seals are suitable for CTC PAL and Thermo Scientific TriPlus autosampler.**

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | PTFE virginal | 53° shore D | 0.25 | 100 | 7.630 452 |
| (2) | Silicone white / PTFE red, UltraClean, clear cap | 45° shore A | 1,3 | 100 | 7.663 237 |
| (3) | Silicone white / PTFE red, UltraClean, red cap | 45° shore A | 1.3 | 100 | 7.646 367 |
| (4) | Silicone white / PTFE red, UltraClean, blue cap | 45° shore A | 1.3 | 100 | 7.622 819 |
| (5) | Silicone white / PTFE red, UltraClean, green cap | 45° shore A | 1.3 | 100 | 7.635 033 |
| (6) | Silicone white / PTFE red, UltraClean, gold cap | 45° shore A | 1.3 | 100 | 7.646 368 |
| (7) | Silicone white / PTFE red, UltraClean, magnetic cap | 45° shore A | 1.3 | 100 | 7.616 841 |
| (8) | Silicone blue-transparent / PTFE white, clear cap | 45° shore A | 1.3 | 100 | 7.631 188 |
| (9) | Silicone dark-blue / PTFE white, clear cap | 45° shore A | 1.3 | 1000 | 4.653 905 |
| (10) | Silicone cream / PTFE red, clear cap | 55° shore A | 1.5 | 100 | 7.621 138 |
| (11) | PTFE red / silicone white / PTFE red, clear cap | 45° shore A | 1.0 | 100 | 6.902 301 |
| (12) | PTFE red / silicone white / PTFE red, magnetic cap | 45° shore A | 1.0 | 100 | 7.616 842 |
| (13) | Silicone white / PTFE red, slitted, clear cap | 45° shore A | 1.3 | 100 | 7.663 238 |
| (14) | Silicone cream / PTFE red, slitted, clear cap | 55° shore A | 1.5 | 100 | 7.647 474 |



## WITH VITON SEPTA

1

Septa made from Viton have a very high resistance against a wide range of solvents. These septa are highly recommended for use with chlorinated solvents.
Viton septa are not suitable for multiple injections or high injection speeds.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Viton 1A black, clear cap | 70° shore A | 1.0 | 100 | 7.630 453 |

## WITH ALUMINIUM SEPTA

**TPF SEAL**
Guaranteed phthalate free

1

Septa made of aluminium are free of halogens and elastomers and suitable for storing standards or reactive substances that can attack normal septum materials. There is also no risk of contamination of the samples with plasticizers, silicone or butyl rubbers or PTFE, FEP or TEF components. A ring placed above the aluminium septum achieves an excellent seal on the stopper system.

**Application areas**

- Elastomer and plastomer analysis
- Phthalate analysis
- Analysis of fluorinated/halogenated organic compounds
- VOC analysis (volatile organic compounds)
- Analysis of polymerisation catalysts

| Type | Description | Thickness mm | PK | Art. no. |
|---|---|---|---|---|
| (1) | Aluminium septum with O-ring seal | 0.06 | 100 | 7.660 047 |

## SPECIAL SEALS FOR CRIMP NECK ND11

1

The blue Push-On caps made of PE have a thinned penetration point, but no additional septum. They are an inexpensive alternative to crimp caps for non-critical applications.

| Type | Description | PK | Art. no. |
|---|---|---|---|
| (1) | PE Push-On cap, blue, thinned penetration point | 100 | 7.616 553 |

## KITS ND11, CRIMP NECK

The LABSOLUTE® kits ND11 contain shrink-wrapped crimp neck vials ND11 made of clear or amber first hydrolytic class glass and corresponding crimp caps made of clear lacquered aluminum with 5.5 mm centre hole.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 7.622 985 |
| Clear glass, **pre-crimped**, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 1000 | 7.614 026 |
| Clear glass, **pre-crimped**, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 1000 | 7.643 985 |
| Clear glass, label, **pre-crimped**, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 1000 | 7.643 966 |
| Clear glass, natural rubber red-orange / butyl red / TEF transparent, 45° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 9.003 564 |
| Clear glass, **pre-crimped**, natural rubber red-orange / butyl red / TEF transparent, 45° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 1000 | 7.643 979 |
| Clear glass, label, natural rubber red-orange / butyl red / TEF transparent, 45° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 9.003 565 |
| Amber glass, label, natural rubber red-orange / butyl red / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 9.003 566 |
| Clear glass, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 6.238 979 |
| Clear glass, silicone cream / PTFE red, 55° shore A, 1.5 mm | 1.5 | 32 x 11.6 | 100 | 7.644 010 |

Suitable LABSOLUTE® crimping tools are listed from page 221

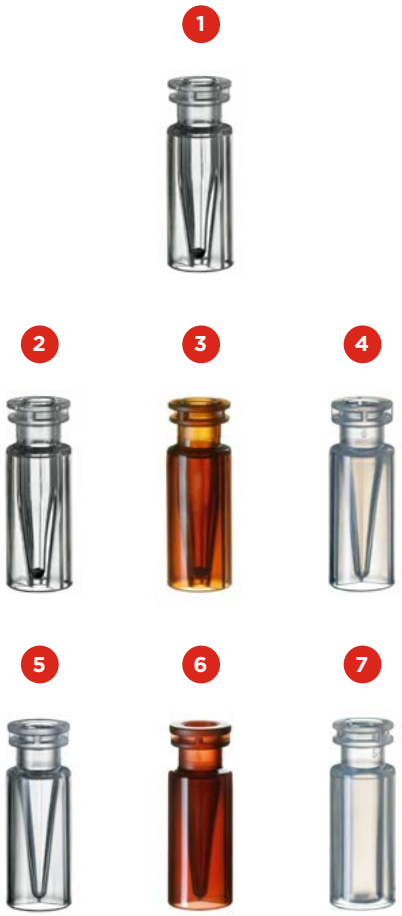

## SNAP RING VIALS AND MICRO-VIALS ND11, WIDE OPENING

Snap ring vials and micro-vials ND11 made of clear and amber first hydrolytic class glass can be used on almost all autosamplers and can also be used on equipment with robotic handling.

As an alternative to snap ring seals, snap ring vials and micro-vials, ND11 can also be sealed with crimp seals ND11 since the two snap ring lips together have the same height as a crimp neck.

**Vials with snap ring seal are only recommended for HPLC.**

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 1.5 | 32 x 11.6 | 100 | 7.645 592 |
| (2) | Clear glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.663 234 |
| (3) | Amber glass, flat bottom, with label | 1.5 | 32 x 11.6 | 100 | 7.645 633 |
| (4) | Clear glass, flat bottom, with integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.660 048 |
| (5) | Amber glass, flat bottom, with integrated micro-insert “Base Bonded” | 0.3 | 32 x 11.6 | 100 | 7.677 375 |
| (6) | Microlitre vial, clear glass | 0.9 | 32 x 11.6 | 100 | 7.655 281 |



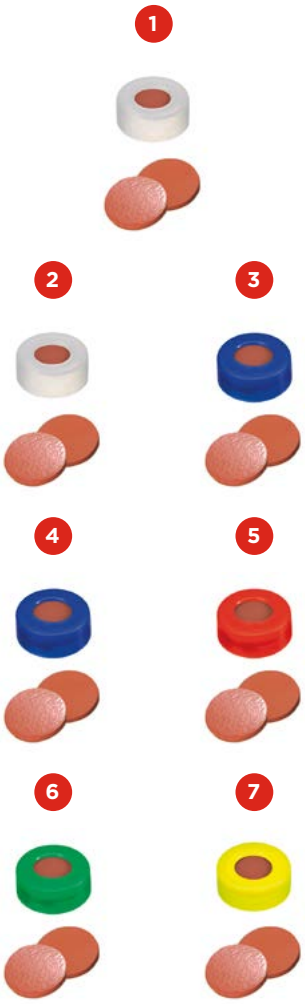

## SNAP RING VIALS AND MICRO-VIALS ND11, PMP OR PP

Snap ring vials and micro-vials ND11 with wide opening made of natural or amber PMP or PP are a shatterproof alternative to glass vials.

| Type | Description | Capacity ml | Material | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Clear, flat bottom, with integrated glass micro-insert, TopSert | 0.2 | PMP | 32 x 11.6 | 100 | 7.631 402 |
| (2) | Clear, flat bottom, with integrated glass micro-insert, TopSert “silanized” | 0.2 | PMP | 32 x 11.6 | 100 | 7.616 109 |
| (3) | Amber, flat bottom, with integrated glass micro-insert, TopSert | 0.2 | PMP | 32 x 11.6 | 100 | 7.616 839 |
| (4) | Clear, flat bottom, with integrated TPX micro-insert | 0.3 | PMP | 32 x 11.6 | 100 | 7.616 860 |
| (5) | Clear, flat bottom, with integrated PP micro-insert | 0.3 | PP | 32 x 11.6 | 100 | 6.901 405 |
| (6) | Amber, flat bottom, with integrated PP micro-insert | 0.3 | PP | 32 x 11.6 | 100 | 7.616 861 |
| (7) | Clear, flat bottom | 0.7 | PP | 32 x 11.6 | 100 | 6.901 955 |

## SNAP RING SEALS ND11

Snap ring seals ND11 are made of PE and are supplied with fitted septa made of a variety of materials. They are available in a soft and hard version as well as in different colours. Snap ring seals are very easy to use, time-saving and inexpensive.



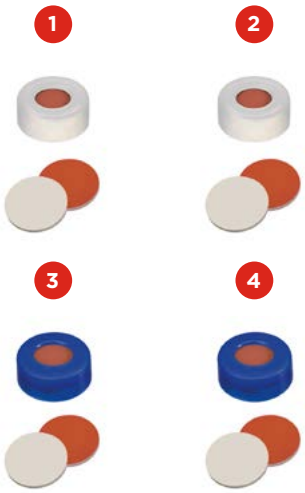

### WITH NATURAL RUBBER / TEF SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

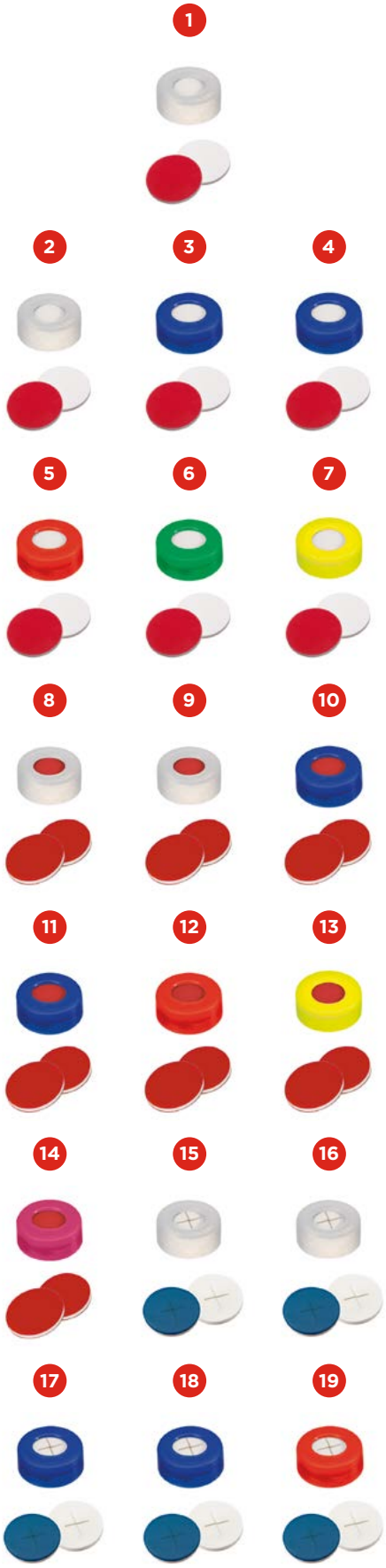
| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent, transparent hard cap | 60° shore A | 1.0 | 100 | 7.608 133 |
| (2) | Natural rubber red-orange / TEF transparent, transparent soft cap | 60° shore A | 1.0 | 100 | 7.663 997 |
| (3) | Natural rubber red-orange/TEF transparent, blue hard cap | 60° shore A | 1.0 | 100 | 7.616 862 |
| (4) | Natural rubber red-orange / TEF transparent, blue soft cap | 60° shore A | 1.0 | 100 | 7.618 920 |
| (5) | Natural rubber red-orange / TEF transparent, red hard cap | 60° shore A | 1.0 | 100 | 7.616 866 |
| (6) | Natural rubber red-orange/TEF transparent, green hard cap | 60° shore A | 1.0 | 100 | 7.647 481 |
| (7) | Natural rubber red-orange/TEF transparent, yellow hard cap | 60° shore A | 1.0 | 100 | 7.647 482 |

### WITH REDRUBBER / PTFE SEPTA

These septa with instrument manufacturer's quality are temperature-resistant from -40 °C to 110 °C. They are easier to penetrate and have lower particle formation than septa made of natural rubber.




| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige, transparent hard cap | 45° shore A | 1.0 | 100 | 7.651 441 |
| (2) | RedRubber / PTFE beige, transparent soft cap | 45° shore A | 1.0 | 100 | 7.663 998 |
| (3) | RedRubber / PTFE beige, blue hard cap | 45° shore A | 1.0 | 100 | 7.651 442 |
| (4) | RedRubber / PTFE beige, blue soft cap | 45° shore A | 1.0 | 100 | 7.618 916 |

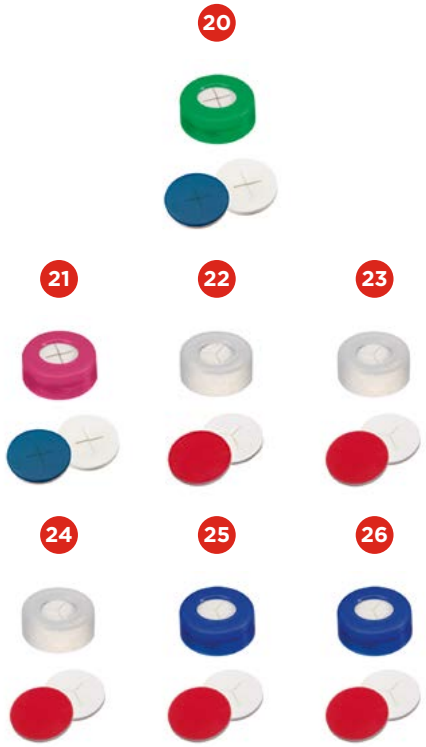



## WITH SILICONE / PTFE SEPTA

These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / PTFE red, UltraClean, transparent hard cap | 45° shore A | 1.3 | 100 | 7.614 940 |
| (2) | Silicone white / PTFE red, UltraClean, transparent soft cap | 45° shore A | 1.3 | 100 | 7.663 999 |
| (3) | Silicone white / PTFE red, UltraClean, blue hard cap | 45° shore A | 1.3 | 100 | 7.616 863 |
| (4) | Silicone white / PTFE red, UltraClean, blue soft cap | 45° shore A | 1.3 | 100 | 7.618 917 |
| (5) | Silicone white / PTFE red, UltraClean, red hard cap | 45° shore A | 1.3 | 100 | 7.616 867 |
| (6) | Silicone white / PTFE red, UltraClean, green hard cap | 45° shore A | 1.3 | 1000 | 4.652 669 |
| (7) | Silicone white / PTFE red, UltraClean, yellow hard cap | 45° shore A | 1.3 | 100 | 7.647 485 |
| (8) | PTFE red / silicone white / PTFE red, transparent hard cap | 45° shore A | 1.0 | 100 | 7.630 864 |
| (9) | PTFE red / silicone white / PTFE red, transparent soft cap | 45° shore A | 1.0 | 100 | 7.618 923 |
| (10) | PTFE red / silicone white / PTFE red, blue hard cap | 45° shore A | 1.0 | 100 | 7.616 864 |
| (11) | PTFE red / silicone white / PTFE red, blue soft cap | 45° shore A | 1.0 | 100 | 7.618 918 |
| (12) | PTFE red / silicone white / PTFE red, red hard cap | 45° shore A | 1.0 | 100 | 7.616 868 |
| (13) | PTFE red / silicone white / PTFE red, yellow hard cap | 45° shore A | 1.0 | 100 | 7.647 483 |
| (14) | PTFE red / silicone white / PTFE red, pink soft cap | 45° shore A | 1.0 | 100 | 7.647 487 |
| (15) | Silicone white / PTFE blue, cross-slitted, transparent hard cap | 55° shore A | 1.0 | 100 | 7.613 331 |
| (16) | Silicone white / PTFE blue, cross-slitted, transparent soft cap | 55° shore A | 1.0 | 100 | 7.618 924 |
| (17) | Silicone white / PTFE blue, cross-slitted, blue hard cap | 55° shore A | 1.0 | 100 | 7.615 797 |
| (18) | Silicone white / PTFE blue, cross-slitted, blue soft cap | 55° shore A | 1.0 | 100 | 7.618 919 |
| (19) | Silicone white / PTFE blue, cross-slitted, red hard cap | 55° shore A | 1.0 | 100 | 7.616 869 |




| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (20) | Silicone white / PTFE blue, cross-slitted, green hard cap | 55° shore A | 1.0 | 100 | 7.647 484 |
| (21) | Silicone white / PTFE blue, cross-slitted, pink soft cap | 55° shore A | 1.0 | 100 | 7.647 488 |
| (22) | Silicone white / PTFE beige, slitted, transparent soft cap | 45° shore A | 1.0 | 100 | 7.664 000 |
| (23) | Silicone white / PTFE red, pre-cut (Y), transparent hard cap | 45° shore A | 1.3 | 100 | 7.644 297 |
| (24) | Silicone white / PTFE red, pre-cut (Y), transparent soft cap | 45° shore A | 1.3 | 100 | 7.644 301 |
| (25) | Silicone white / PTFE red, pre-cut (Y), blue hard cap | 45° shore A | 1.3 | 100 | 7.654 496 |
| (26) | Silicone white / PTFE red, pre-cut (Y), blue soft cap | 45° shore A | 1.3 | 100 | 7.654 497 |

## KITS ND11, SNAP RING

The LABSOLUTE® kits ND11 contain shrink-wrapped snap ring vials ND11 made of clear or amber first hydrolytic class glass and corresponding snap caps made of PE with 6 mm centre hole.

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, transparent hard cap, natural rubber red-orange / TEF transparent, 60° shore A, 1.0 mm | 1.5 | 32 x 11.6 | 100 | 6.255 820 |
| Clear glass, transparent hard cap, silicone white / PTFE red, 45° shore A, 1.3 mm, UltraClean | 1.5 | 32 x 11.6 | 100 | 7.644 366 |
| Clear glass, transparent hard cap, silicone white / PTFE blue, 55° shore A, 1.0 mm, cross-slitted | 1.5 | 32 x 11.6 | 100 | 7.644 379 |

Further LABSOLUTE® ND11 vials, caps, septa and kits available on request


## SCREW NECK VIALS ND13

Screw neck vials ND13 with 13-425 thread made of clear and amber first hydrolytic class glass facilitate easy filling with viscous substances thanks to their wide opening.

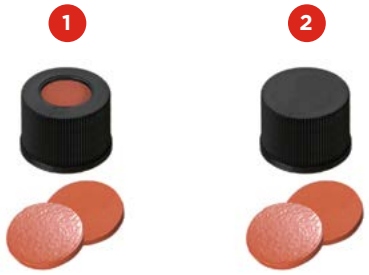
The LABSOLUTE® vials for optimised micro-sampling are the best solution for very small sample volumes.

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 4.0 | 45 x 14.7 | 100 | 7.613 421 |
| (2) | Amber glass, flat bottom | 4.0 | 45 x 14.7 | 100 | 7.603 252 |
| (3) | Clear glass, flat bottom, with label | 4.0 | 45 x 14.7 | 100 | 7.616 808 |
| (4) | Amber glass, flat bottom, with label | 4.0 | 45 x 14.7 | 100 | 7.616 870 |
| (5) | Clear glass, flat bottom, optimised micro-sampling | 3.5 | 45 x 14.7 | 100 | 7.648 254 |
| (6) | Amber glass, flat bottom, optimised micro-sampling | 3.5 | 45 x 14.7 | 100 | 7.648 518 |

## SCREW SEALS ND13

Screw seals ND13 are made of PP and have a 13-425 thread. They have a 8.5 mm centre hole or are closed. Screw seals are supplied with fitted septa made of a variety of materials or without any septa.

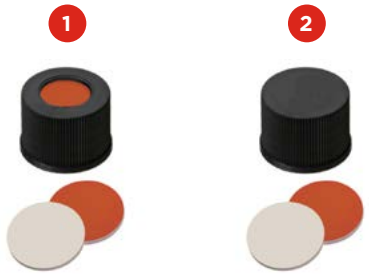
### WITH NATURAL RUBBER / TEF SEPTA




These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.621 159 |
| (2) | Natural rubber red-orange / TEF transparent, closed | 60° shore A | 1.3 | 100 | 7.613 422 |

### WITH REDRUBBER / PTFE SEPTA

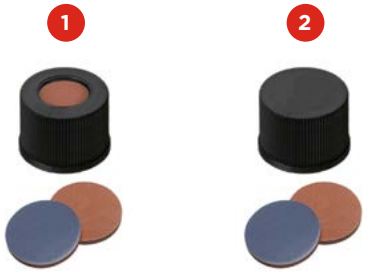



These septa are temperature-resistant from -40 °C to 110 °C and easier to penetrate and have lower particle formation than septa made of natural rubber.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | RedRubber / PTFE beige | 45° shore A | 1.3 | 100 | 7.646 877 |
| (2) | RedRubber / PTFE beige, closed | 45° shore A | 1.3 | 100 | 7.646 876 |

## WITH BUTYL / PTFE SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties.




| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Butyl red / PTFE grey | 55° shore A | 1.3 | 100 | 7.616 871 |
| (2) | Butyl red / PTFE grey, closed | 55° shore A | 1.3 | 100 | 7.616 209 |

## WITH SILICONE / PTFE SEPTA

These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or RedRubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.


| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone dark-blue / PTFE white | 45° shore A | 1.3 | 100 | 7.647 513 |
| (2) | Silicone cream / PTFE red | 55° shore A | 1.5 | 100 | 7.621 158 |
| (3) | Silicone cream / PTFE red, closed | 55° shore A | 1.5 | 100 | 7.632 198 |
| (4) | Silicone cream / PTFE red, white cap | 55° shore A | 1.5 | 100 | 7.617 058 |
| (5) | PTFE red / silicone white / PTFE red | 45° shore A | 1.0 | 100 | 7.616 872 |
| (6) | Silicone white / PTFE blue, cross-slitted | 55° shore A | 1.5 | 100 | 7.616 873 |

## WITHOUT SEPTA

Suitable septa with a diameter of 12 mm made of different materials are available on request.


| Type | Description | PK | Art. no. |
|---|---|---|---|
| (1) | Screw cap, black | 100 | 7.615 951 |
| (2) | Screw cap, black, closed | 100 | 6.204 817 |
| (3) | Screw cap, white | 100 | 7.647 512 |
| (4) | Screw cap, white, closed | 100 | 7.615 656 |

## KITS ND13

The LABSOLUTE® kits ND13 contain shrink-wrapped screw vials ND13 made of clear or amber first hydrolytic class glass and corresponding screw caps made of PP.

Septa with a double-sided PTFE coating show a very low particle formation during penetration.

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, black caps, 8.5 mm centre hole, natural rubber red-orange / TEF transparent, 60° shore A, 1.3 mm | 4.0 | 45 x 14.7 | 100 | 7.621 760 |
| Amber glass, black caps, 8.5 mm centre hole, natural rubber red-orange / TEF transparent, 60° shore A, 1.3 mm | 4.0 | 45 x 14.7 | 100 | 7.621 761 |
| Amber glass, black caps, 8.5 mm centre hole, PTFE red / silicone white / PTFE red, 1.0 mm, 45° shore A | 4.0 | 45 x 14.7 | 100 | 7.648 604 |

Further LABSOLUTE® ND13 vials, caps, septa and kits available on request

## CRIMP NECK VIALS ND13, WIDE OPENING

Crimp neck vials ND13 made of clear first hydrolytic class glass are special products which require a minimum order quantity.


| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, flat bottom | 2.0 | 32 x 16 | 100 | 7.677 374 |
| (2) | Clear glass, flat bottom | 4.0 | 45 x 14.7 | 100 | 7.648 602 |

## CRIMP SEALS ND13

Crimp seals ND13 are made of aluminium. They are clear lacquered and have a 6 mm centre hole, a centre tear-off or complete tear-off. They are supplied with fitted septa made of a variety of materials.

The septa made of silicone white/PTFE red are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

The septa made of butyl red/PTFE grey are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties with regard to cleanliness.

On Pharma-Fix seals, it is only the butyl areas that can come into contact with the sample, are PTFE coated. The areas that abut the edges of the glass are not coated. This ensures a particularly good seal.


| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.647 502 |
| (2) | Butyl red / PTFE grey | 55° shore A | 2.0 | 100 | 7.632 356 |
| (3) | Butyl red / PTFE grey, centre tear-off | 55° shore A | 2.0 | 100 | 7.647 505 |
| (4) | Butyl / PTFE, Pharma-Fix | 50° shore A | 2.0 | 1000 | 7.670 913 |
| (5) | Butyl / PTFE, Pharma-Fix, centre tear-off | 50° shore A | 2.0 | 100 | 7.615 288 |
| (6) | Silicone white / PTFE red | 45° shore A | 1.3 | 100 | 7.657 319 |

## SHELL VIALS WITH STOPPER

The shell vials made of clear or amber first hydrolytic class glass come in a set with transparent PE plugs. The star-shaped diaphragm in the plug facilitates easy penetration.

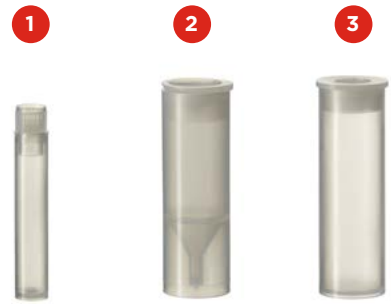
Shell vials made of plastic are a shatter-proof alternative to glass vials. They also come with a PE plug.

**This easy-to-use, inexpensive vial/plug combination is suitable for non-critical analyses, especially in the field of HPLC.**

### GLASS

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass | 1 | 35 x 7.8 | 100 | 7.612 017 |
| (2) | Clear glass, plugs without insertion barrier | 1 | 40 x 8.2 | 100 | 7.677 195 |
| (3) | Clear glass, plugs with insertion barrier* | 1 | 40 x 8.2 | 100 | 7.620 436 |
| (4) | Amber glass, plugs without insertion barrier | 1 | 40 x 8.2 | 100 | 7.618 925 |
| (5) | Amber glass, plugs with insertion barrier* | 1 | 40 x 8.2 | 100 | 7.616 878 |
| (6) | Clear glass | 2 | 31.5 x 11.6 | 100 | 7.621 467 |
| (7) | Amber glass | 2 | 31.5 x 11.6 | 100 | 7.616 879 |
| (8) | Clear glass | 4 | 44.6 x 14.65 | 100 | 7.632 226 |
| (9) | Amber glass | 4 | 44.6 x 14.65 | 100 | 7.616 880 |

* Please select this vial/seal set if micro-inserts are used. Please note, however, that penetration of the seal is slightly more difficult due to the insertion barrier.



### PLASTIC, PP

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Transparent | 1 | 40 x 8 | 100 | 7.654 498 |
| (2) | Transparent, with inner cone | 3 | 44.6 x 14.65 | 100 | 7.654 505 |
| (3) | Transparent | 4 | 44.6 x 14.65 | 100 | 7.654 504 |

### MICRO-INSERTS FOR SHELL VIALS

These micro-inserts made of first hydrolytic class glass are suitable for shell vials only.

| Type | Description | Usable volume µl | Nominal volume µl | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Clear glass, 13 mm conical tip* | 150 | 200 | 34 x 5 | 1000 | 7.616 881 |

* Only in combination with 7.620 436 and 7.616 878

## SCREW NECK VIALS ND15 / ND18


Screw neck vials ND15 and ND18 made of clear and amber first hydrolytic class glass in combination with the corresponding screw caps are highly suitable as sample storage vials.

Screw neck vials ND15 have a 15-425 thread. ND18 vials have a 18-400 thread.

Item 7.616 139 is also suitable for headspace analysis (Perkin Elmer).

| Type | Description | Capacity ml | For | Size mm | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Clear glass | 8 | ND15 | 61 x 16.6 | 100 | 7.616 898 |
| (2) | Amber glass | 8 | ND15 | 61 x 16.6 | 100 | 7.618 935 |
| (3) | Clear glass | 12 | ND15 | 66 x 18.5 | 100 | 7.616 655 |
| (4) | Amber glass | 12 | ND15 | 66 x 18.5 | 100 | 7.618 936 |
| (5) | Clear glass, flat bottom | 16 | ND18 | 71 x 20.6 | 100 | 7.616 899 |
| (6) | Clear glass, rounded bottom | 20 | ND18 | 75.5 x 23.5 | 100 | 7.616 139 |

## SCREW SEALS ND15 / ND18

Screw seals ND15 are made of PP and are supplied without or with fitted septa made of a variety of materials. They have a 15-425 thread, a 9 mm centre hole or are closed.

Screw seals ND18 are made of PP and are supplied with or without fitted septa made of a variety of materials. They have a 18-400 thread, a 12 mm centre hole or are closed.

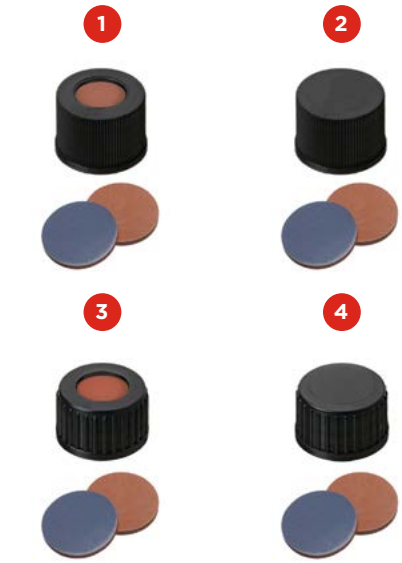
ND15 seals are suitable for items 7.616 898, 7.618 935, 7.616 655 and 7.618 936.
ND18 seals are suitable for items 7.616 899 and 7.616 139.

**These ND18 screw caps with 18-400 thread are not compatible with ND18 precision thread vials!**

### WITH NATURAL RUBBER / TEF SEPTA


These septa are temperature-resistant from -40 °C to 120 °C and ideal for multiple injections thanks to their excellent resealability properties.

| Type | Description | Hardness | Thickness mm | For | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | ND15 | 100 | 7.658 824 |
| (2) | Natural rubber red-orange / TEF transparent, closed | 60° shore A | 1.3 | ND15 | 100 | 7.660 050 |




## WITH BUTYL / PTFE SEPTA

These septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties.

| Type | Description | Hardness | Thickness mm | For | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Butyl red / PTFE grey | 55° shore A | 1.6 | ND15 | 100 | 7.659 991 |
| (2) | Butyl red / PTFE grey, closed | 55° shore A | 1.6 | ND15 | 100 | 7.616 653 |
| (3) | Butyl red / PTFE grey | 55° shore A | 1.6 | ND18 | 100 | 7.616 885 |
| (4) | Butyl red / PTFE grey, closed | 55° shore A | 1.6 | ND18 | 100 | 7.616 140 |


## WITH SILICONE / PTFE SEPTA

These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

| Type | Description | Hardness | Thickness mm | For | PK | Art. no. |
|---|---|---|---|---|---|---|
| (1) | Silicone white / PTFE red | 45° shore A | 1.3 | ND15 | 100 | 7.671 516 |
| (2) | Silicone white / PTFE red, closed | 45° shore A | 1.3 | ND15 | 100 | 7.616 654 |
| (3) | Silicone white / PTFE red | 55° shore A | 1.5 | ND18 | 1000 | 7.639 588 |
| (4) | Silicone white / PTFE red, closed | 55° shore A | 1.5 | ND18 | 1000 | 7.672 038 |
| (5) | Silicone blue transparent / PTFE white | 45° shore A | 1.7 | ND18 | 100 | 7.616 886 |
| (6) | Silicone blue transparent / PTFE white, closed | 45° shore A | 1.7 | ND18 | 100 | 7.616 887 |


## WITHOUT SEPTA

Suitable septa with a diameter of 16 mm (only for ND18 screw caps) made of different materials are available on request.

| Type | Description | For | PK | Art. no. |
|---|---|---|---|---|
| (1) | Screw cap | ND15 | 1000 | 7.644 004 |
| (2) | Screw cap, closed | ND15 | 1000 | 7.647 537 |
| (3) | Screw cap | ND18 | 1000 | 7.629 085 |
| (4) | Screw cap, closed | ND18 | 100 | 7.677 373 |

## PRECISION THREAD HEADSPACE VIALS ND18

Precision thread headspace vials ND18 made of clear and amber first hydrolytic class glass are a practical alternative to the corresponding crimp neck vials ND20. Thanks to its many thread turns, the precision thread ensures that the septum is pressed firmly against the glass neck, keeping the vial gas-tight.

**The vials are suitable both for solid phase microextraction (SPME) and for headspace applications. They are especially used with autosamplers made by CTC Pal, Varian, Gerstel, Atas, Shimadzu and Agilent.**


| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, rounded bottom | 10 | 46 x 22.5 | 100 | 7.620 815 |
| (2) | Amber glass, rounded bottom | 10 | 46 x 22.5 | 100 | 7.616 895 |
| (3) | Clear glass, rounded bottom | 20 | 75.5 x 22.5 | 100 | 7.630 303 |
| (4) | Amber glass, rounded bottom | 20 | 75.5 x 22.5 | 100 | 7.621 127 |

## PRECISION THREAD SCREW SEALS ND18, MAGNETIC

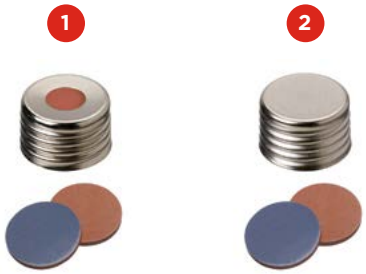
Precision thread screw seals ND18 are made of metal and supplied with fitted septa made of a variety of materials. The hole size is selected so that the cap is suitable both for SPME and headspace applications. However, enough surface is left for the magnet to be able to transport a completely filled vial. The screw-on mechanism ensures that the cap always has a flat surface so that the bottle cannot fall from the magnet. Separation of the vial and cap for disposal after analysis is much easier than with crimp caps.

Closed caps in combination with precision thread screw vials ND18 are ideal for sample storage.

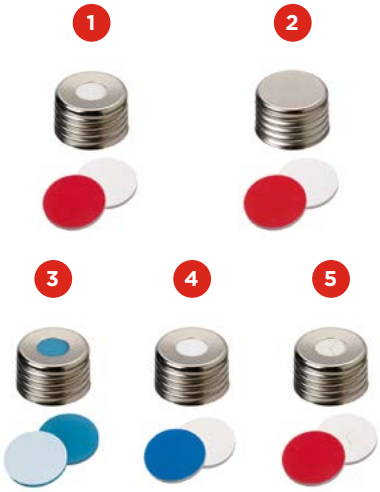
**Precision thread screw seals are not suitable for item 7.616 139 !**

### WITH BUTYL / PTFE SEPTA

Septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties.




| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Butyl red / PTFE grey | 55° shore A | 1.6 | 100 | 7.615 717 |
| (2) | Butyl red / PTFE grey, closed | 55° shore A | 1.6 | 100 | 7.622 171 |




## WITH SILICONE / PTFE SEPTA

Septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / PTFE red, UltraClean | 45° shore A | 1.3 | 100 | 7.621 126 |
| (2) | Silicone white / PTFE red, UltraClean, closed | 45° shore A | 1.3 | 100 | 7.616 897 |
| (3) | Silicone transparent blue / PTFE white, UltraClean* | 45° shore A | 1.3 | 100 | 7.630 304 |
| (4) | Silicone white / PTFE blue, UltraClean* | 55° shore A | 1.5 | 100 | 7.621 125 |
| (5) | Silicone white / PTFE red, pre-cut (star)** | 55° shore A | 1.5 | 100 | 7.676 995 |

* Tested and approved by CTC

** Especially suitable for SPME application due to the pre-cut septum


## WITH SILICONE / ALUMINIUM SEPTA

These septa are temperature-resistant from -60 °C to 220 °C and have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications. The silicone is fully coated with a silver aluminium foil. These kind of septa are often used for applications on Pekrin Elmer instruments.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / aluminium foil silver | 50° shore A | 1.3 | 100 | 7.644 779 |

## SNAP CAP VIALS ND18 / ND22


Snap cap vials ND18 / ND22 are made of clear third hydrolytic class glass. They are easy to handle and can be opened and sealed very quickly. Transparent PE caps have to be ordered separately.

| Type | Description | Size mm | Capacity ml | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Snap cap vial ND18 | 40 x 20 | 5 | 100 | 7.621 182 |
| (2) | Snap cap vial ND18 | 50 x 22 | 10 | 100 | 7.620 831 |
| (3) | Snap cap vial ND22 | 48 x 26 | 15 | 100 | 7.634 393 |
| (4) | Snap cap vial ND22 | 65 x 26 | 25 | 100 | 7.630 475 |

## SNAP CAP VIAL KITS ND18 / ND22 / ND28

Snap cap vials are made of clear third hydrolytic class glass. They are easy to handle and can be opened and sealed very quickly. Transparent PE caps come together with the vials packed in one handy box.

| Description | Capacity ml | Size mm | Lid colour | PK | Art. no. |
|---|---|---|---|---|---|
| Snap cap vial + snap cap | 3 | 30 x 18 | ND 18 | 200 | 7.674 251 |
| Snap cap vial + snap cap | 5 | 40 x 19 | ND 18 | 100 | 7.674 250 |
| Snap cap vial + snap cap | 10 | 45 x 22 | ND 22 | 200 | 7.674 249 |
| Snap cap vial + snap cap | 15 | 52 x 24 | ND 22 | 200 | 7.674 248 |
| Snap cap vial + snap cap | 20 | 70 x 26 | ND 22 | 200 | 7.677 399 |
| Snap cap vial + snap cap | 20 | 55 x 26 | ND 22 | 200 | 7.677 400 |
| Snap cap vial + snap cap | 25 | 50 x 30 | ND 28 | 250 | 7.677 401 |
| Snap cap vial + snap cap | 30 | 75 x 28 | ND 22 | 200 | 7.674 246 |
| Snap cap vial + snap cap | 40 | 80 x 30 | ND 28 | 200 | 7.674 245 |
| Snap cap vial + snap cap | 50 | 100 x 30 | ND 28 | 200 | 7.669 680 |
| Snap cap vial + snap cap | 100 | 145 x 34 | ND 28 | 200 | 7.677 402 |

## CAPS FOR SNAP CAP VIALS ND18 / ND22 / ND28


The transparent PE caps fit perfectly to the snap cap vials ND18 / ND22 / ND28.

| Type | Description | Size mm | PK | Art. no. |
|---|---|---|---|---|
| (1) | Snap cap ND18 | 19.8 x 5.2 | 100 | 7.620 830 |
| (2) | Snap cap ND22 | 23.5 x 5.5 | 100 | 7.630 476 |
| (3) | Snap cap ND28 | 29.7 x 5.6 | 100 | 7.677 370 |


## CRIMP NECK AND HEADSPACE VIALS ND20

Crimp neck and headspace vials ND20 with rounded or flat bottom made of clear and amber first hydrolytic class glass need to be able to withstand very high internal pressures and, as a result, their walls are generally 1.2 mm thick. The vials are available with a flat DIN crimp neck or with a bevelled neck (HS neck).

On the flat DIN crimp neck, liners have a greater contact surface, which ensures a better seal. A bevelled HS neck is required if the overpressure safety seal system patented by Perkin Elmer is used, since excess pressure can only be reliably dissipated in vials with an HS neck.

| Type | Description | Compatible with | Capacity | Size | PK | Art. no. |
|---|---|---|---|---|---|---|
| | | | ml | mm | | |
| (1) | Clear glass, crimp neck, flat bottom | Varian | 5 | 38 x 20 | 100 | 7.620 148 |
| (2) | Amber glass, crimp neck, flat bottom** | Varian | 5 | 38 x 20 | 100 | 7.648 634 |
| (3) | Clear glass, HS neck, rounded bottom | Perkin Elmer | 5 | 38.2 x 22 | 100 | 7.615 908 |
| (4) | Clear glass, DIN crimp neck, rounded bottom | Carlo Erba, CTC, Fisons, Varian (CP) | 10 | 46 x 22.5 | 100 | 7.615 808 |
| (5) | Amber glass, DIN crimp neck, rounded bottom | Carlo Erba, CTC, Fisons, Varian (CP) | 10 | 46 x 22.5 | 100 | 7.616 883 |
| (6) | Clear glass, DIN crimp neck, flat bottom, long neck | Carlo Erba, Dani, Fisons, Agilent | 10 | 46 x 22.5 | 100 | 7.621 813 |
| (7) | Clear glass, crimp neck, flat bottom | Varian | 10 | 54.5 x 20 | 100 | 7.620 147 |
| (8) | Amber glass, crimp neck, flat bottom** | Varian | 10 | 54.5 x 20 | 100 | 7.648 635 |
| (9) | Clear glass, DIN crimp neck, flat bottom, long neck | Carlo Erba, Dani, Fisons, Agilent | 20 | 75.5 x 22.5 | 100 | 6.204 710 |
| (10) | Clear glass, DIN crimp neck, rounded bottom, long neck | CTC PAL, Varian, Gerstel, Atas, Shimadzu and TriPlusHS | 20 | 75.5 x 22.5 | 100 | 7.612 926 |
| (11) | Amber glass, DIN crimp neck, rounded bottom, long neck | CTC PAL, Varian, Gerstel, Atas, Shimadzu and TriPlusHS | 20 | 75.5 x 22.5 | 100 | 7.616 552 |
| (12) | Clear glass, special crimp neck, rounded bottom* | CTC PAL | 20 | 75.5 x 22.5 | 100 | 7.632 402 |
| (13) | Clear glass, HS neck, rounded bottom | Perkin Elmer, Tekmar | 20 | 75.5 x 23 | 100 | 7.620 798 |
| (14) | Amber glass, HS neck, rounded bottom | Perkin Elmer, Tekmar | 20 | 75.5 x 23 | 100 | 7.613 394 |
| (15) | Clear glass, HS neck, rounded bottom, with label | Perkin Elmer, Tekmar | 20 | 75.5 x 23 | 100 | 7.613 328 |
| (16) | Clear glass, HS neck, flat bottom, long neck | Agilent | 20 | 75.5 x 22.5 | 100 | 7.648 101 |

* Especially for SPME applications

** Special item with higher minimum order quantity

## CRIMP AND HEADSPACE SEALS ND20

Crimp and headspace seals ND20 are made of aluminium and are supplied with fitted septa made of a variety of materials. There are the following different types of caps available:

**Plain caps with a 10 mm center hole**. These caps are suitable for standard applications. They are available in several colours on request.

Clear lacquered caps, so called **headspace caps**, with a special score line that breaks when the internal pressure reaches 3.0 ±0.5 bar. The excess pressure is then released, and the risk of the vial exploding can be avoided.

Clear lacquered **centre tear-off caps** and **complete tear-off caps**.
These caps are available in several colours on request.

Gold lacquered, **magnetic crimp caps with 5 mm centre hole** to be used with CE HS500/HS800, CTC 500, as well as Fisons HS500 / HS800 instruments.

Gold lacquered, **magnetic crimp caps with 8 mm centre hole** to be used with CTC Combi PAL instruments.

Red lacquered, **magnetic bimetal crimp caps with 8 mm centre hole** to be used with CTC Combi PAL instruments.

### WITH CHLORO-BUTYL SEPTA

These dark grey septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties. They are 3.0 mm thick and have a hardness of 55° shore A. Because of the missing PTFE coating, the pure butyl septa are an economic alternative for non-critical analysis.


| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 7.630 898 |
| (2) | Headspace | 100 | 7.608 140 |
| (3) | Centre tear-off | 100 | 7.633 655 |
| (4) | Complete tear-off | 100 | 7.631 029 |
| (5) | Magnetic, 5 mm | 100 | 7.630 472 |
| (6) | Magnetic, 8 mm | 1000 | 6.240 960 |

### WITH BROMO-BUTYL / PTFE SEPTA

These grey septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties. They are 3.0 mm thick and have a hardness of 50° shore A.


| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 7.615 320 |
| (2) | Headspace | 100 | 7.613 446 |
| (3) | Centre tear-off | 100 | 7.612 177 |
| (4) | Complete tear-off | 100 | 7.612 176 |
| (5) | Magnetic, 5 mm | 100 | 7.631 586 |
| (6) | Magnetic, 8 mm | 100 | 7.612 927 |
| (7) | Magnetic, bimetal, 8 mm | 100 | 7.637 329 |


## WITH BROMO-BUTYL / PTFE SEPTA, PHARMA-FIX

These grey septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties. They are 3.0 mm thick and have a hardness of 50° shore A.

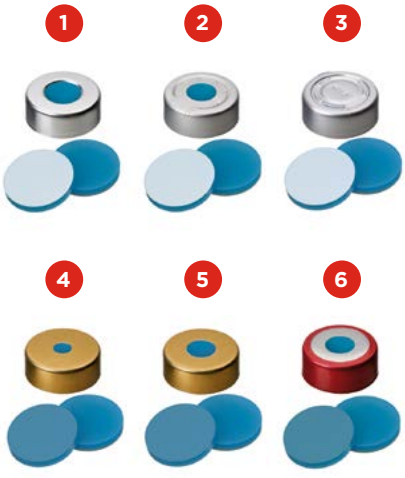
Also on Pharma-Fix seals, it is only the butyl areas that can come into contact with the sample, and these are PTFE coated. The areas that abut the edges of the glass are not coated. This ensures a particularly good seal.

| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 7.614 955 |
| (2) | Headspace | 100 | 7.621 340 |
| (3) | Centre tear-off | 100 | 7.636 094 |
| (4) | Complete tear-off | 100 | 7.622 285 |
| (5) | Magnetic, 5 mm | 100 | 7.621 341 |
| (6) | Magnetic, 8 mm | 100 | 7.613 329 |


## WITH BUTYL / PTFE SEPTA

These septa made of red butyl and grey PTFE are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties. They are 3.0 mm thick and have a hardness of 50° shore A.

| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 7.648 632 |




## WITH SILICONE / PTFE SEPTA, ULTRACLEAN

These septa, made of silicone blue transparent / PTFE white, are temperature-resistant from -60 °C to 200 °C. They are 3.0 mm thick and have a hardness of 45° shore A. They have better purity than septa made of natural rubber or red rubber. However they have less effective resealability properties and are therefore more suitable for single-injection applications.

Due to their high cleanliness, they are especially used for critical and sensitive analysis.

| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 6.204 709 |
| (2) | Headspace | 100 | 7.615 893 |
| (3) | Complete tear-off | 1000 | 6.239 164 |
| (4) | Magnetic, 5 mm* | 100 | 7.615 224 |
| (5) | Magnetic, 8 mm* | 100 | 7.615 866 |
| (6) | Magnetic, bimetal, 8 mm* | 100 | 7.616 884 |

* Septa silicone blue-transparent / PTFE transparent, 45° shore A, 3.0 mm

## WITH SILICONE / PTFE SEPTA, HT QUALITY

These septa, made of silicone white / PTFE beige, are temperature-resistant from -60 °C to 200 °C. They are 3.2 mm thick and have a hardness of 45° shore A. They have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

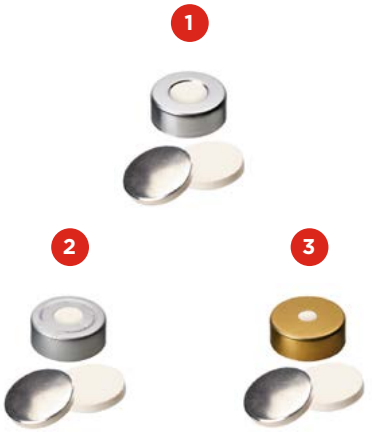
Due to their high cleanliness, they are especially used for critical and sensitive analysis.

**These seals correspond to competitor HT liner!**


| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 7.621 046 |
| (2) | Headspace | 100 | 7.621 047 |
| (3) | Magnetic, 8 mm | 1000 | 7.659 620 |
| (4) | Magnetic, bimetal, 8 mm | 100 | 7.648 631 |

## WITH SILICONE / ALUMINIUM SEPTA

These septa are temperature-resistant from -60 °C to 220 °C. They are 3.0 mm thick and have a hardness of 50° shore A. They have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications. The silicone is fully coated with a silver aluminium foil and is often used on Perkin Elmer instruments.




| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 100 | 6.086 772 |
| (2) | Headspace | 100 | 7.615 848 |
| (3) | Magnetic, 5 mm | 1000 | 6.229 530 |

## WITH VITON SEPTA

Septa made from Viton with a hardness of 70° shore A and a thickness of 1.0 mm have a very high resistance against a wide range of solvents. These septa are highly recommended for use with chlorinated solvents.
Viton septa are not suitable for multiple injections or high injection speeds.


| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Magnetic, 8 mm | 100 | 7.674 302 |


## WITHOUT SEPTA

Suitable septa with a diameter of 20 mm made of different materials are available on request.

| Type | Caps | PK | Art. no. |
|---|---|---|---|
| (1) | Standard, 10 mm | 1000 | 7.615 550 |
| (2) | Headspace | 1000 | 7.670 648 |
| (3) | Centre tear-off | 1000 | 7.626 356 |
| (4) | Complete tear-off | 1000 | 7.638 103 |

# PE CAPS FOR HEADSPACE / CRIMP NECK VIALS ND20

These caps made of transparent PE are generally used to seal washing bottles of autosamplers, but also for intermediate closure when collecting samples out in the field. They are available in three different dimensions with several septa.

## 22 X 8.4 MM, 4.3 MM CENTRE HOLE


Suitable for the following vials:
7.620 798, 7.615 908, 7.613 328 and 7.613 394.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.661 597 |
| (2) | Butyl red / PTFE grey | 55° shore A | 1.3 | 100 | 7.634 142 |
| (3) | Silicone blue-transparent / PTFE white | 45° shore A | 1.3 | 100 | 7.647 542 |

## 22 X 9.1 MM, 4.3 MM CENTRE HOLE


Suitable for the following vials:
7.612 175, 7.620 146, 7.621 813, 6.204 710, 7.620 148, 7.620 147, 7.612 926, 7.615 808, 7.616 552 and 7.616 883.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.616 888 |
| (2) | Butyl red / PTFE grey | 55° shore A | 1.3 | 100 | 7.616 889 |
| (3) | Silicone blue transparent / PTFE white | 45° shore A | 1.3 | 100 | 7.616 890 |
| (4) | Silicone blue transparent / PTFE white, Y-slitted | 45° shore A | 1.3 | 100 | 7.657 337 |
| (5) | Without septum* | | | 100 | 7.647 541 |

* Suitable septa with a diameter of 19.5 mm made of different materials are available on request

## 22 X 9.1 MM, 6.0 MM CENTRE HOLE

Suitable for the following vials:
7.612 175, 7.620 146, 7.621 813, 6.204 710, 7.620 148, 7.620 147, 7.612 926, 7.615 808, 7.616 552 and 7.616 883.


| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone blue transparent / PTFE white, Y-slitted | 45° shore A | 1.3 | 100 | 7.671 337 |

## CRIMP NECK AND HEADSPACE VIALS ND20 / ND40, SPECIAL DIMENSIONS

The screw cap 7.622 166 for bottle 7.622 167 has to be ordered separately.


| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, crimp neck ND20 | 50 | 101 x 31 | 100 | 7.612 175 |
| (2) | Clear glass, crimp neck ND20 | 100 | 94.5 x 51.6 | 88 | 7.620 146 |
| (3) | Clear glass, screw neck ND40 | 50 | 69.5 x 44 | 1000 | 7.622 167 |
| (4) | Clear glass, screw neck 20-400 | 20 | 86 x 22.5 | 100 | 7.663 432 |

## SCREW SEALS ND20

Screw seals ND20 are made of white PP and supplied with fitted septa made of a variety of materials. They have a 20-400 thread and are closed.

**Suitable for screw neck vial 7.663 432.**


| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Natural rubber red-orange / TEF transparent | 60° shore A | 1.3 | 100 | 7.677 372 |
| (2) | Butyl red / PTFE grey | 55° shore A | 1.3 | 100 | 7.639 759 |
| (3) | Silicone white / PTFE red | 45° shore A | 1.3 | 100 | 7.657 799 |


## SCREW NECK VIALS ND24 (EPA)

Screw neck vials ND24 made of clear and amber first hydrolytic class glass are suitable for EPA (Environmental Protection Association) analysis and can, upon request, be supplied with a sterility certificate that is specifically required for TOC analyses.

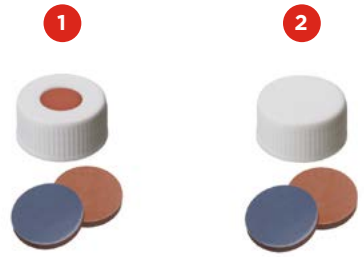
**These vials are especially used with autosamplers made by Agilent, Dionex, Shimadzu, Tekmar, Thermo Scientific and Varian.**

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass | 20 | 57 x 27.5 | 100 | 7.663 211 |
| (2) | Amber glass | 20 | 57 x 27.5 | 100 | 7.631 988 |
| (3) | Clear glass | 30 | 72.5 x 27.5 | 100 | 7.615 411 |
| (4) | Amber glass | 30 | 72.5 x 27.5 | 100 | 7.632 370 |
| (5) | Clear glass | 40 | 95 x 27.5 | 100 | 7.663 215 |
| (6) | Amber glass | 40 | 95 x 27.5 | 100 | 7.663 216 |
| (7) | Clear glass | 60 | 140 x 27.5 | 100 | 7.663 217 |
| (8) | Amber glass | 60 | 140 x 27.5 | 100 | 7.616 902 |

## SCREW SEALS ND24 (EPA)

Screw seals ND24 (EPA) are made of PP and are supplied with or without fitted septa made of a variety of materials. They have a 24-400 thread, a 15 mm centre hole or are closed.

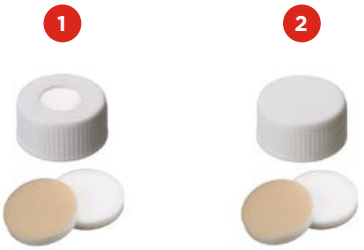
### WITH BUTYL / PTFE SEPTA




These septa are temperature-resistant from -40 °C to 120 °C and have excellent chemical properties.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Butyl red / PTFE grey | 55° shore A | 2.5 | 100 | 7.664 004 |
| (2) | Butyl red / PTFE grey, closed | 55° shore A | 2.5 | 100 | 7.664 005 |

### WITH SILICONE / PTFE SEPTA, EPA QUALITY




These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However they have less effective resealability properties and are therefore more suitable for single-injection applications.

| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / PTFE beige | 45° shore A | 3.2 | 100 | 7.664 006 |
| (2) | Silicone white / PTFE beige, closed | 45° shore A | 3.2 | 100 | 7.664 007 |

## WITH SILICONE / PTFE SEPTA, ULTRABOND, EPA QUALITY

These septa are temperature-resistant from -60 °C to 200 °C and have better purity than septa made of natural rubber, butyl or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications.

With Ultrabond seals, the caps and septa form an inseparable unit, which means that even a blunt needle is unable to push the septa into the vial.


| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone natural / PTFE beige | 45° shore A | 3.2 | 100 | 7.612 151 |
| (2) | Silicone natural / PTFE beige, closed | 45° shore A | 3.2 | 100 | 7.616 000 |

## WITH SILICONE / ALUMINIUM SEPTA

These septa are temperature-resistant from -60 °C to 220 °C and have better purity than septa made of natural rubber or red rubber. However, they have less effective resealability properties and are therefore more suitable for single-injection applications. The silicone is fully coated with a silver aluminium foil.


| Type | Description | Hardness | Thickness mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Silicone white / aluminium foil silver, closed | 50° shore A | 3.0 | 100 | 7.677 369 |

## WITHOUT SEPTA

Suitable septa with a diameter of 22 mm made of different materials are available on request.


| Type | Description | PK | Art. no. |
|---|---|---|---|
| (1) | Screw cap | 100 | 7.677 371 |
| (2) | Screw cap, closed | 100 | 7.615 412 |

## KITS ND24

The LABSOLUTE® kits ND24 contain shrink-wrapped screw vials ND24 made of clear or amber first hydrolytic class glass and corresponding screw caps made of PP.

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Clear glass, white caps, 15 mm centre hole, **pre-screwed**, silicone white / PTFE beige, 45° shore A, 3.2 mm | 40.0 | 95 x 27.5 | 100 | 7.657 480 |
| Clear glass, white caps, 15 mm centre hole, **pre-screwed**, silicone white / PTFE beige, 45° shore A, 3.2 mm, Ultrabond | 40.0 | 95 x 27.5 | 1000 | 7.660 179 |


## VASE VIALS

The LABSOLUTE® vials for optimised micro-sampling are the best solution for very small sample volumes. The universally usable, so called vase vials with a residual volume of max. 15 µl can be tighly closed with the suitable LABSOLUTE® caps. All the vials are made of clear or amber first hydrolytic class glass. Because of their wide base, the vials stand independent and safe in almost every autosampler.

Further vials with ND8 or ND10 screw neck are available on request.

| Type | Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, crimp neck ND11 | 1.2 | 32 x 11.6 | 100 | 7.648 512 |
| (2) | Amber glass, crimp neck ND11 | 1.2 | 32 x 11.6 | 100 | 7.648 513 |
| (3) | Clear glass, snap ring ND11 | 1.2 | 32 x 11.6 | 100 | 7.648 514 |
| (4) | Amber glass, snap ring ND11 | 1.2 | 32 x 11.6 | 100 | 7.648 515 |
| (5) | Clear glass, short thread neck ND9 | 1.2 | 32 x 11.6 | 100 | 7.648 516 |
| (6) | Amber glass, short thread neck ND9 | 1.2 | 32 x 11.6 | 100 | 7.648 517 |


## VIALS WITH DIRECTLY CLOSABLE MICRO-INSERT

The special LABSOLUTE® vials made of clear or amber first hydrolytic class glass have a base bonded micro-insert with the vial head on it. The micro-insert can be directly closed by a suitable LABSOLUTE® cap. These vials are therefore ideal for volatile samples and micro reactions, because substances cannot escape into the space between insert and outer shell. In addition, the universally applicable vials with a nominal volume of 250 µl also have a significantly smaller residual volume than the combinations of vials and micro-inserts.

| Type | Description | Capacity µl | Size mm | PK | Art. no. |
|---|---|---|---|---|---|
| (1) | Clear glass, crimp neck ND11 | 250 | 32 x 11.6 | 100 | 7.648 521 |
| (2) | Amber glass, crimp neck ND11 | 250 | 32 x 11.6 | 100 | 7.648 522 |
| (3) | Clear glass, snap ring ND11 | 250 | 32 x 11.6 | 100 | 7.648 523 |
| (4) | Amber glass, snap ring ND11 | 250 | 32 x 11.6 | 100 | 7.648 524 |
| (5) | Clear glass, short thread neck ND9 | 250 | 32 x 11.6 | 100 | 7.648 525 |
| (6) | Amber glass, short thread neck ND9 | 250 | 32 x 11.6 | 100 | 7.648 526 |

## KIT FOR TITRATION ACCORDING TO KARL-FISCHER

The LABSOLUTE® kit ND20 consists of crimp neck vials made of clear glass of the first hydrolytic class and corresponding aluminum crimp closures with an ultraclean septum made of silicone/PTFE. The special dimensions of the vials and the modification of the closures are perfectly adapted for the use with the Metrohm 774 & 874 Oven Sample Processor for the determination of the water content according to Karl-Fischer.

COMPATIBLE WITH METROHM 774 & 874 OVEN SAMPLE PROCESSOR

| Description | Capacity ml | Size mm | PK | Art. no. |
|---|---|---|---|---|
| Crimp neck vial ND20, clear glass, flat bottom, crimp cap ND20, aluminium, septa silicone blue transparent / PTFE white, 3.0 mm, 45° shore A, UltraClean | 6.0 | 38.2 x 21.7 | 100 | 7.648 231 |

## STANDARD BLOCK SYSTEMS

All well plates made of PP and sealmats are fully chromatography tested. There are several advantages compared to usual vials and caps. Furthermore, the SBS/ANSI footprint assures compatibility with all well plate capable prep stations and chromatography autosamplers.

Well plates and sealmats are suitable for polar and non-polar solvents, in case of very critical analysis and very low sample concentrations.

- Space saving on the lab bench and when stored
- Faster sample preparation when multichannel pipettes are used
- Time saving because many different samples are prepared on one single plate

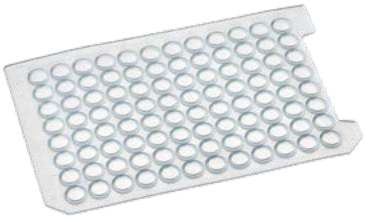
### STANDARD WELL PLATES, 96 POSITIONS

The plates made of PP are non-coated, non-sterile and chromatography tested.

Glass coated well plates are available on request.

| Description | Height mm | Usable volume µl | PK | Art. no. |
|---|---|---|---|---|
| Micro well plate, round opening, 96 positions, 8 mm diameter, V shape | 14.4 | 10 - 450 | 20 | 7.644 703 |
| Micro well plate, square opening, 96 positions | 44 | 50 - 1900 | 5 | 7.644 707 |

### BLOCK COVERS, 96 POSITIONS



The block covers (Sealmats) are non-sterile and suitable for standard well plates with 96 positions.

Suitable for items 7.644 703 and 7.644 707.

| Description | Colour | PK | Art. no. |
|---|---|---|---|
| EVA, round, for 8 mm diameter | Clear | 5 | 7.644 713 |
| Silicone / PTFE, round, for 8 mm diameter | Blue | 5 | 7.644 715 |
| Silicone, square, slitted | Clear | 5 | 7.644 720 |

Further LABSOLUTE® block systems available on request

## CRIMPING AND DECAPPING TOOLS, MANUAL, STANDARD

The crimping and decapping tools feature a chemically resistant surface lacquer that has been developed especially for use in the laboratory. Additionally, the crimping tools have hardened closing jaws with a special alloy that guarantee a long service life. The crimping pressure and crimping height of the crimping tools can also be adapted to the design of the crimp neck and septal thickness.

### CRIMPING TOOLS

| Description | PK | Art. no. |
|---|---|---|
| Crimper for 8 mm crimp caps | 1 | 9.003 470 |
| Crimper for 11 mm crimp caps | 1 | 9.003 471 |
| Crimper for 13 mm crimp caps | 1 | 9.003 473 |
| Crimper for 13 mm Flip Top/Flip Off seals | 1 | 7.652 437 |
| Crimper for 20 mm crimp caps | 1 | 9.003 475 |
| Crimper for 20 mm Flip Top/Flip Off seals | 1 | 7.610 160 |
| Crimper for 28 mm crimp caps | 1 | 6.281 869 |
| Crimper for 32 mm crimp caps | 1 | 6.301 675 |

### DECAPPING TOOLS

| Description | PK | Art. no. |
|---|---|---|
| Decapper for 8 mm crimp caps | 1 | 9.003 511 |
| Decapper for 11 mm crimp caps | 1 | 9.003 367 |
| Decapper for 13 mm crimp caps | 1 | 9.003 368 |
| Decapper for 20 mm crimp caps | 1 | 9.003 369 |
| Decapper for 28 mm crimp caps | 1 | 7.647 543 |
| Decapper for 32 mm crimp caps | 1 | 7.621 611 |

## CRIMPING AND DECAPPING TOOLS, MANUAL, STAINLESS STEEL

Crimping and decapping tools are completely made of stainless steel and feature lasting durability despite steam sterilization and autoclaving. Additionally, the crimping tools have hardened closing jaws with a special alloy that guarantee a long service life. The crimping pressure and crimping height of the crimping tools can also be adapted to the design of the crimp neck and septal thickness.

### CRIMPING TOOLS

| Description | PK | Art. no. |
|---|---|---|
| Crimper for 11 mm crimp caps | 1 | 7.654 510 |
| Crimper for 13 mm crimp caps | 1 | 7.654 511 |
| Crimper for 13 mm Flip Top/Flip Off seals | 1 | 7.644 158 |
| Crimper for 20 mm crimp caps | 1 | 7.654 512 |
| Crimper for 20 mm Flip Top/Flip Off seals | 1 | 7.644 157 |

**SUITABLE FOR CLEANROOM APPLICATIONS**

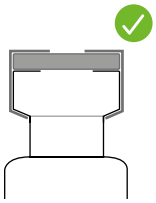
### DECAPPING TOOLS

| Description | PK | Art. no. |
|---|---|---|
| Decapper for 13 mm crimp caps | 1 | 7.654 514 |
| Decapper for 20 mm crimp caps | 1 | 7.654 515 |

**Tip:** In light of the different crimp neck designs and septal thicknesses that are used, both the crimping pressure and the crimping height of crimping tools need to be adjustable.

The crimping pressure can be limited using an adjusting screw in the handle. The crimping height is adjusted using the Allen key supplied. To do this, hold the crimping edge of the forceps firmly and insert the Allen key into the opening provided on the crimping head. Turning the key to the right moves the crimping head upwards, and the crimping is looser. Turning the Allen key to the left moves the crimping head downwards, and the crimping is firmer.

**Correct crimping**



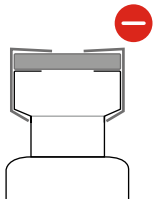
Close proximity of the aluminium cap edge

Flat and undamaged cap sides

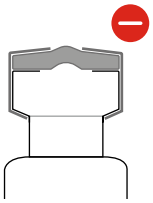
Flat cap surface

Flat septum surface

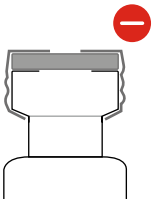
**Incorrect crimping**



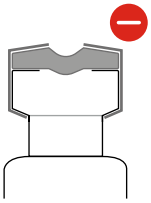
Space between the aluminium cap edges



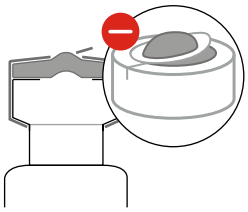
Curving of the crimp cap



Deformity of the cap sides



Convex-looking liner



Rounded cap edges
Curving of the cap liner upwards

## CRIMPING TOOL, PNEUMATIC, MANUAL

The pneumatic hand-held crimping tool makes crimping and decapping of vials very easy and ergonomic. The time spent to crimp or decap a series of many samples, especially, is shortend clearly. As the balancer compensates the weight of the pneumatic crimper, steady and precise crimping is no problem.

- Operated by compressed air (min. 6.2 bar = 90 psi)
- Easy handling
- Interchangeable heads for crimping and decapping
- Adjustable, constant and reproducible crimping pressure
- Space-saving installation with a balancer on your working bench (Art. 7.618 928)
- CE mark of conformity

**Inlet air supply connector G 1/4" thread (female) has to be provided by the customer!**

| Description | PK | Art. no. |
|---|---|---|
| Pneumatic basic crimping tool incl. pressure regulator, safety valve and PA twisted hose | 1 | 7.618 927 |
| Stand with foot switch | 1 | 7.644 958 |

## CRIMPING AND DECAPPING HEADS FOR PNEUMATIC CRIMPING TOOL

Suitable for use with the pneumatic crimping tool 7.618 927.

Further crimping and decapping heads for standard crimp caps and Flip Top / Flip Off seals are available on request.

| Description | PK | Art. no. |
|---|---|---|
| Crimping head for 20 mm crimp caps | 1 | 7.621 742 |
| Decapping head for 20 mm crimp caps | 1 | 7.618 932 |

## CRIMPING TOOL, PNEUMATIC, AIRGO

The pneumatic crimping tool makes crimping quite easy and shortens the time to crimp all your vials in daily routine analysis. The completely new designed ergonomic tool with easy push button guarantees a fully joint-friendly work position.

- Unique ultra slim design of the crimping jaws is perfect for in-tray crimping of the vials
- Suitable for cleanroom applications
- Optional balancer helps to save space on the lab bench and keeps the crimper clean and ready to use in reach
- High-pressure and low-pressure version available

Other Types of the AIRGO crimping tool are available on request.

| Description | PK | Art. no. |
|---|---|---|
| 11 mm high pressure AIRGO crimping tool | 1 | 7.648 346 |

## CRIMPING AND DECAPPING TOOL, ELECTRONIC

Electronic crimpers and decappers provide secure, reproducible crimps and quick and easy removal of aluminium seals. The tools can be used quite mobile because of the built-in rechargeable long life lithium ion battery. Ergonomic design and push button operation eliminates wrist strain especially at large sample series. Adjustable crimp settings make the crimping tool compatible with most vial/seal combinations. The adjusted crimping pressure can be seen easily at any time. A brush-less gear technology guarantees a longer lifetime and less particle emission.

- Vials can be crimped and decapped while they remain in the sample tray
- Tools can be used while recharging
- Universal 100–240 V charger included

### CRIMPING TOOL, ELECTRONIC

Other Types of the electronic crimper are available on request.

| Description | PK | Art. no. |
|---|---|---|
| Crimping tool for 8 mm crimp caps | 1 | 7.646 583 |
| Crimping tool for 11 mm crimp caps | 1 | 7.662 425 |
| Crimping tool for 20 mm crimp caps | 1 | 7.662 426 |

### DECAPPING TOOL, ELECTRONIC

Other Types of the electronic decapper are available on request.

| Description | PK | Art. no. |
|---|---|---|
| Decapping tool for 11 mm crimp caps | 1 | 7.646 804 |
| Decapping tool for 20 mm crimp caps | 1 | 7.646 958 |

## HIGH-POWER CRIMP STATION, ELECTRONIC, PROGRAMMABLE

The electronic high-power crimp station guarantees best crimp results for various closures, septa thickness and vials. It is especially used for magnetic steel caps. The tool is fully programmable. The different crimp and decapping heads can be removed and installed in seconds. Crimp-force sensing automatically determines when a proper seal has been formed and opens the jaws to release the vial. Overcrimping is almost completely avoided.

- 10 adjustment programms is available for each crimp and decapping head
- Including crimp and decapping head for 20 mm crimp seals
- Also suitable for aluminium and bimetal caps

| Description | PK | Art. no. |
|---|---|---|
| High-power crimp station, electronic, programmable | 1 | 7.665 477 |