

SAMPLE VAULT SERIES™ Coded Caps for Bruker SampleJet

Integrated Closure System

Sample Vault™ Series NMR tubes with Sample Vault™ caps (U.S. Patent No. 8,054,080), are engineered for a new generation of high-throughput lab automation systems, including the Bruker SampleJet. Designed to be used with 96 position carriers using 103.5mm (about 4") long NMR tubes with open port caps, or 178mm (7") long NMR tubes with closed port caps, Sample Vault™ caps have superior holding and sealing capabilities which eliminate cap / tube failure in your instrument. Our patented design incorporates a white band positioned on the NMR tube that aligns with the base of the cap, indicating a properly locked position. Together, our Sample Vault™ caps and Sample Vault™ tubes form an integrated closure system for fail-safe delivery of your sample into the magnet. We offer Sample Vault™ tubes in 1mm, 1.7mm, 3mm & 5mm outer diameters for use up to 700 MHz and 950 MHz. Our proven quality and innovative engineering speaks for itself.

Sample Vault™ NMR Sample Tube Rack

NMR sample tube rack manufactured from laboratory engineered high strength & high modulus biopolymer

- 96 position NMR sample tube rack for use in SampleJet systems
- Available with coded, open port Sample Vault™ NMR sample tube caps
- Available with 1mm, 1.7mm, 3mm & 5mm NMR sample tubes

SampleJet is a trademark of Bruker-Physik AG

Available in coded with open port for
1mm, 1.7mm, 3mm & 5mm applications.
See Sample Vault™ Tube Rack cap options
on page 17.



SAMPLE VAULT™ SERIES NMR TUBES & CAPS

U.S. Patent No. 8,054,080

1mm, 1.7mm, 3mm & 5mm Sample Vault™ Series NMR Tubes & Caps for Bruker SampleJet

PACKED IN LOTS OF 96 WITH CAPS. SHIPS IN OUR COMPOSTABLE BIOPOLYMER TUBE RACK.

U.S. Patent No. 8,054,080

| Item No. | MHz Rating | Cap Type | Cap Color | OD | Wall Size | Concentricity | Camber | Length |
|---------------------|---------------|------------|-----------|-------|-----------|---------------|--------|---------|
| SVOP-5-103.5-96PK | Up to 900 MHz | Coded Open | Black | 5mm | 0.38mm | 40 µm | 60 µm | 103.5mm |
| SVOP-3-103.5-96PK | Up to 900 MHz | Coded Open | Black | 3mm | 0.38mm | 40 µm | 60 µm | 103.5mm |
| SVOP-1.7-103.5-96PK | Up to 900 MHz | Coded Open | Gray | 1.7mm | 0.38mm | 40 µm | 60 µm | 103.5mm |
| SVOP-1-103.5-96PK | Up to 900 MHz | Coded Open | Black | 1mm | 0.38mm | 40 µm | 60 µm | 103.5mm |

Spherical Closures to Seal the Sample Vault™ Open Port Caps

THIS CLOSURE WILL FIT THE 1MM, 1.7MM, 3MM AND 5MM SAMPLE VAULT™ OPEN PORT CAPS

| Item No. | Description | Color | Packed in Lots of |
|-----------|-------------------|-------|-------------------|
| OPC-100PK | Spherical Closure | White | 100 |



Spherical Closure for Open Port Cap

Silicone Closures to Seal the Sample Vault™ Open Port Caps

THIS CLOSURE WILL FIT THE 1MM, 1.7MM, 3MM AND 5MM SAMPLE VAULT™ OPEN PORT CAPS

| Item No. | Description | Color | Packed in Lots of |
|---------------------|------------------|-------------|-------------------|
| SVC-SAMPLEVAULT-SRS | Tapered Silicone | Clear | 50 |
| | Rubber Plug | Translucent | 100 |

• Not for use in Bruker SampleJet



Tapered Silicone Closure for Open Port Cap

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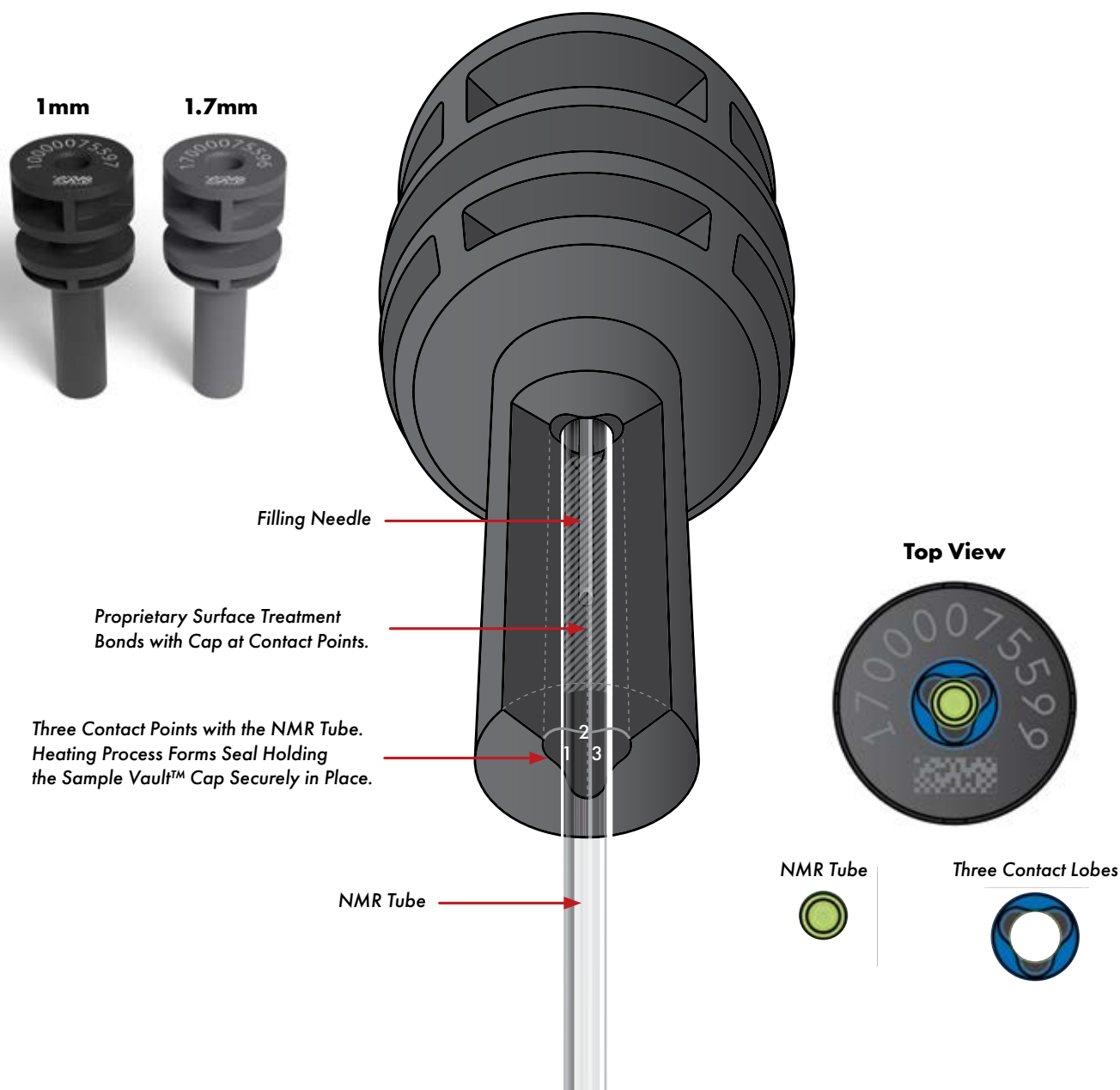
SAMPLE VAULT™ SERIES NMR TUBES & CAPS

U.S. Patent No. 8,054,080

Sample Vault™ 1mm & 1.7mm NMR Sample Tubes & Caps for Bruker SampleJet

Our patented Sample Vault™ NMR tubes and caps use our proprietary heat sealing treatment to ensure a permanent, slip-free sample containment. Three internal lobes are heat molded to our patented surface treatment on the NMR sample tube to form a secure bond between the cap and the NMR tube. 1mm & 1.7mm Sample Vault™ NMR tubes ship in our 96 position, biopolymer NMR sample tube rack for use in SampleJet systems.

1mm & 1.7mm Sample Vault™ NMR Tubes & Caps Anatomy



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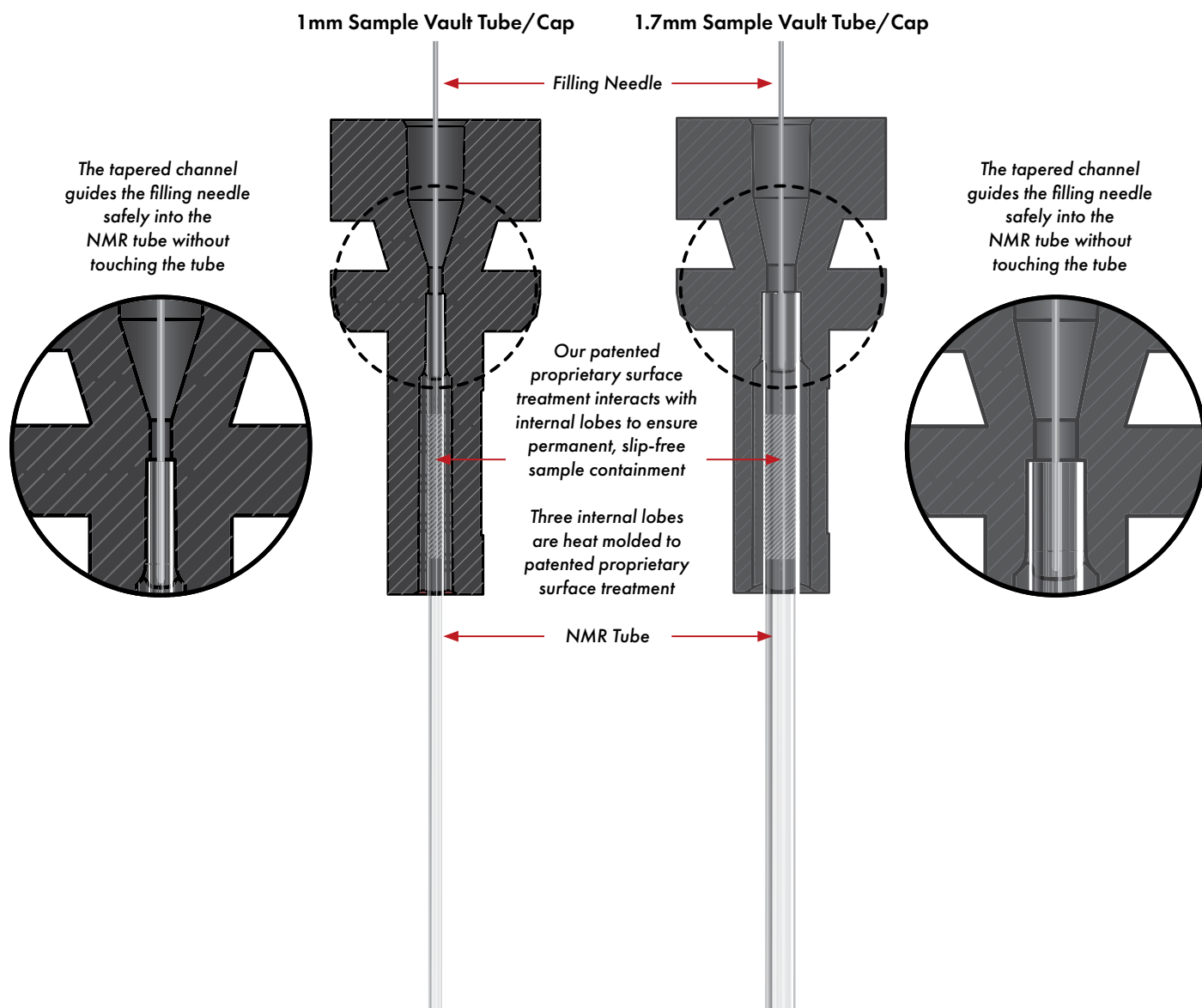
SAMPLE VAULT™ SERIES NMR TUBES & CAPS

U.S. Patent No. 8,054,080

1mm & 1.7mm Sample Vault™ Series NMR Tubes & Caps for Bruker SampleJet

PACKED IN LOTS OF 96 WITH CAPS. SHIPS IN OUR COMPOSTABLE BIOPOLYMER TUBE RACK.

| Item No. | MHz Rating | Cap Type | Cap Color | OD | Wall Size | Concentricity | Camber | Length |
|---------------------|---------------|------------|-----------|-------|-----------|---------------|--------|---------|
| SVOP-1-103.5-96PK | Up to 900 MHz | Coded Open | Black | 1mm | 0.38mm | 40 µm | 60 µm | 103.5mm |
| SVOP-1.7-103.5-96PK | Up to 900 MHz | Coded Open | Gray | 1.7mm | 0.38mm | 40 µm | 60 µm | 103.5mm |



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Integrated Closure System

Sample Vault™ Series NMR tubes with Sample Vault™ caps (U.S. Patent No. 8,054,080), are engineered for a new generation of high-throughput lab automation systems, including the Bruker SampleJet. Designed to be used with 96 position carriers using 103.5mm (about 4") long NMR tubes with open port caps, or 178mm (7") long NMR tubes with closed port caps, Sample Vault™ caps have superior holding and sealing capabilities which eliminate cap / tube failure in your instrument. Our patented design incorporates a white band positioned on the NMR tube that aligns with the base of the cap, indicating a properly locked position. Together, our Sample Vault™ caps and Sample Vault™ tubes form an integrated closure system for fail-safe delivery of your sample into the magnet. We offer Sample Vault™ tubes in 1mm, 1.7mm, 3mm & 5mm outer diameters for use up to 700 MHz and 950 MHz. Our proven quality and innovative engineering speaks for itself.

- Engineered for a new generation of high-throughput lab automation systems, such as the SampleJet™ system from Bruker.
- Two precision types available for up to 700 MHz and 950 MHz spectrometers.
- Superior Sample Vault™ cap (U.S. Patent No.8,054,080) attaches semi-permanently for multiple uses and for critical applications.
- Choice of two Sample Vault™ cap styles: either closed port or open port, giving you the ultimate in choice of sample sealing.
- Closures are available to seal the Sample Vault™ Open Port caps. They are made of a soft, resilient silicone rubber that forms a very effective seal, with a high degree of inertness, solvent resistance and high temperature capability (up to 200°C). The closures are easily removed, and may be trimmed to length with a knife blade or scissors.
- Safe for cold refrigeration storage, works with cryo-probes and variable temperature studies.



SAMPLE VAULT™ SERIES NMR TUBES & CAPS

U.S. Patent No. 8,054,080

Sample Vault™ Series NMR Tubes & Caps Specifications

PACKED IN LOTS OF 96 WITH CAPS. CHOOSE OPEN OR CLOSED PORT.

| Item No. | MHz Rating | Cap Type | Cap Color | OD | Wall Size | Concentricity | Camber | Length |
|-------------------------|---------------|-----------------|-----------|-----|-----------|---------------|--------|---------|
| SVCP-5-103.5-96PK | Up to 700 MHz | Closed/Uncoated | Red | 5mm | 0.38mm | 40 µm | 60 µm | 103.5mm |
| SVCP-5-178-96PK | Up to 700 MHz | Closed/Uncoated | Black | 5mm | 0.38mm | 40 µm | 60 µm | 178mm |
| SVCP-3-103.5-96PK | Up to 700 MHz | Closed/Uncoated | Red | 3mm | 0.38mm | 40 µm | 60 µm | 103.5mm |
| SVCP-3-178-96PK | Up to 700 MHz | Closed/Uncoated | Black | 3mm | 0.38mm | 40 µm | 60 µm | 178mm |
| SVCP-Super-5-103.5-96PK | Up to 950 MHz | Closed/Uncoated | Red | 5mm | 0.38mm | 20 µm | 30 µm | 103.5mm |
| SVOP-Super-5-103.5-96PK | Up to 950 MHz | Open/Uncoated | White | 5mm | 0.38mm | 20 µm | 30 µm | 103.5mm |
| SVCP-Super-5-178-96PK | Up to 950 MHz | Closed/Uncoated | Red | 5mm | 0.38mm | 20 µm | 30 µm | 178mm |
| SVOP-Super-5-178-96PK | Up to 950 MHz | Open/Uncoated | White | 5mm | 0.38mm | 20 µm | 30 µm | 178mm |
| SVCP-Super-3-103.5-96PK | Up to 950 MHz | Closed/Uncoated | Red | 3mm | 0.38mm | 20 µm | 30 µm | 103.5mm |
| SVOP-Super-3-103.5-96PK | Up to 950 MHz | Open/Uncoated | White | 3mm | 0.38mm | 20 µm | 30 µm | 103.5mm |
| SVCP-Super-3-178-96PK | Up to 950 MHz | Closed/Uncoated | Red | 3mm | 0.38mm | 20 µm | 30 µm | 178mm |
| SVOP-Super-3-178-96PK | Up to 950 MHz | Open/Uncoated | White | 3mm | 0.38mm | 20 µm | 30 µm | 178mm |

Medium Wall and Heavy Wall Sample Vault™ NMR Tubes

PACKED IN LOTS OF 5 WITH CAPS. CHOOSE OPEN OR CLOSED PORT.

| Item No. | MHz Rating | Cap Type | OD (mm) | ID (mm) | Wall (mm) | Length (mm) | Concentricity | Camber |
|-------------------------|---------------|----------|--------------|--------------|-----------|-------------|---------------|--------|
| SVCP-Super-5-MW-103.5-5 | Up to 950 MHz | Closed | 4.97 ± 0.013 | 3.43 ± 0.025 | 0.8 | 103.5 | 20 µm | 30 µm |
| SVOP-Super-5-MW-103.5-5 | Up to 950 MHz | Open | 4.97 ± 0.013 | 3.43 ± 0.025 | 0.8 | 103.5 | 20 µm | 30 µm |
| SVCP-Super-5-HW-103.5-5 | Up to 950 MHz | Closed | 4.97 ± 0.013 | 2.20 ± 0.025 | 1.4 | 103.5 | 20 µm | 30 µm |
| SVOP-Super-5-HW-103.5-5 | Up to 950 MHz | Open | 4.97 ± 0.013 | 2.20 ± 0.025 | 1.4 | 103.5 | 20 µm | 30 µm |

Closed Port Sample Vault™ Caps

PACKED IN LOTS OF 96

| Item No. | Cap Type | Cap Color | Size |
|-------------------------------|--------------|-----------|------|
| SVCP-SAMPLEVAULT-3-96PK | Closed Port | Red | 3mm |
| SVCP-SAMPLEVAULT-5-96PK | Closed Port | Red | 5mm |
| SVCP-CC-SAMPLEVAULT-3-96PK-BO | Closed/Coded | Black | 3mm |
| SVCP-CC-SAMPLEVAULT-5-96PK-BO | Closed/Coded | Black | 5mm |

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