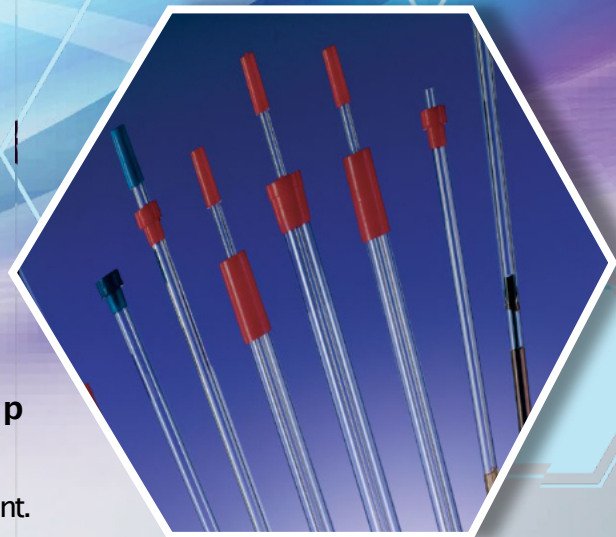


Consumables for Liquid-Phase Small Volume & External Reference NMR

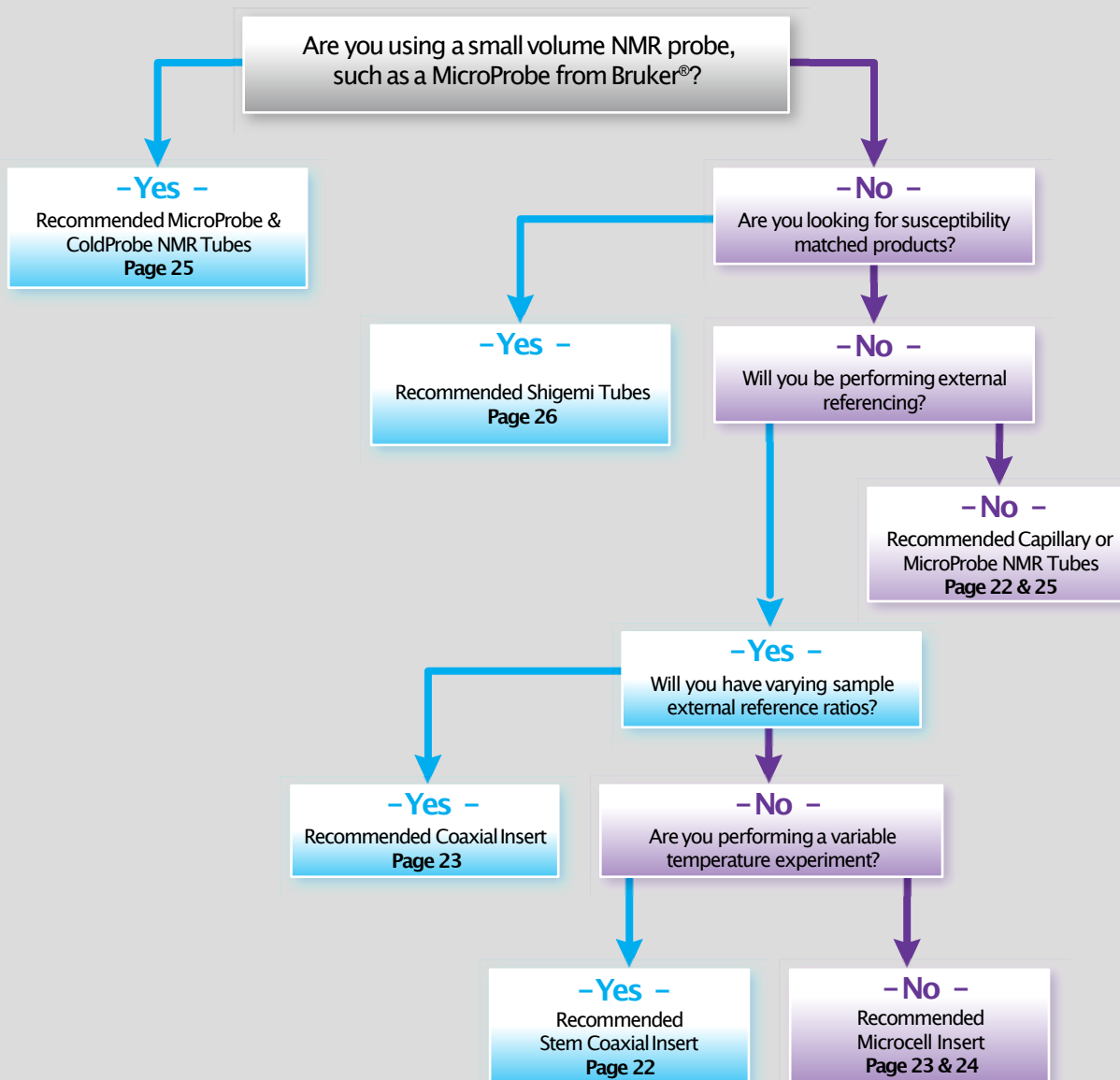


Microcell Technical Tip

To improve shimming-quality and signal lock surround the microcell with reference solvent.



Small Volume NMR Tube Selection Guide



Pyrex® NMR Capillary Tubes

Wilmad's Pyrex® capillary tubes are a low cost solution for small volume NMR measurement.

- Available with both ends open or sealed at one end
- Tested at 400 MHz field
- Made of ASTM Type 1 Class A glass



Pyrex NMR Capillary Tubes

Catalog No.	Description	O.D.	I.D.	Length	Package Qty.
WG-1364-1	Sealed at one end	1.0mm	0.8mm	75mm	10
WG-1364-1-203M	Sealed at one end	1.0mm	0.8mm	203mm	5
WG-1365-1	Both ends open	1.0mm	0.8mm	300mm	1
WG-1364-1.7	Sealed at one end	1.7mm	1.3mm	100mm	10
WG-1364-1.7-5	Sealed at one end	1.7mm	1.3mm	127mm	10
WG-1364-1.7-203M	Sealed at one end	1.7mm	1.3mm	203mm	5
WG-1365-1.7	Both ends open	1.7mm	1.3mm	300mm	1
WG-1364-1.9	Sealed at one end	1.9mm	1.5mm	110mm	10
WG-1365-1.9	Both ends open	1.9mm	1.5mm	300mm	1
WG-1364-2	Sealed at one end	2.0mm	1.6mm	100mm	10
WG-1364-2-203M	Sealed at one end	2.0mm	1.6mm	203mm	5
WG-1365-2	Both ends open	2.0mm	1.6mm	300mm	1
WG-1364-2.5A	Sealed at one end	2.5mm	2.2mm	100mm	10
WG-1364-2.5A-203M	Sealed at one end	2.5mm	2.2mm	203mm	5
WG-1365-2.5A	Both ends open	2.5mm	2.2mm	300mm	1

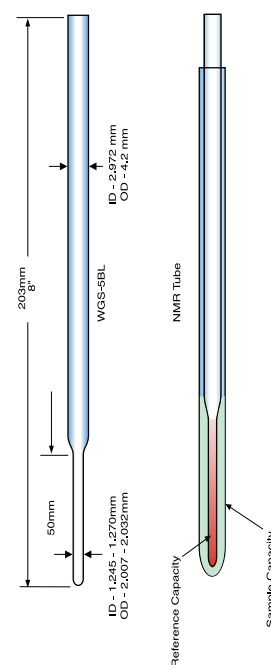
Stem Coaxial Small Volume NMR Insert

The most versatile and reliable coaxial system available for NMR experiments is the Wilmad Stem Coaxial Small Volume NMR Inserts.

- General applications include small volume NMR, external referencing, external locking and magnetic susceptibility determination
- Manufactured from ASTM Type 1 class A glass, ideal for variable temperature studies
- Outer tube must be ordered separately depending on magnetic field strength

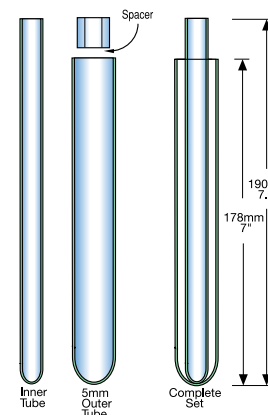
Stem Coaxial Small Volume NMR Insert

Catalog No.	Fits Outer Tube with O.D.	Stem Height	Stem O.D.	Inner Capacity	Outer Capacity	Use with
WGS-4BL	4mm	25mm	2mm	30 µL	124 µL	406-PP, 427-PP
WGS-5BL	5mm	50mm	2mm	60 µL	530 µL	506-PP to 535-PP
WGS-5BL-SP	5mm	50mm	3.3mm	220 µL	260 µL	506-PP to 535-PP
WGS-8BL	8mm	50mm	3mm	190 µL	1560 µL	513A-XPP
WGS-10BL	10mm	50mm	4mm	410 µL	2600 µL	513-XPP



Coaxial Small Volume NMR Insert

- Switch between three unique sample/reference solution ratios during external referencing experiments
- Ideal for variable temperature experiments since material remains the same between the outer tube, inner tube and spacer
- Insert and outer tube in complete set systems are fused together at the bottom; recommended for high field experiments under 600MHz
- For ultra high field experiment over 600MHz, order an inner tube, two spacers and a Wilmad Precision Thin-Walled Tube over 600 MHz separately



Complete Sets

Catalog No.	Components
517-Complete	517-Inner, 517-Outer, 517-Spacer, 5mm Cap with hole (C/N: 521-WGS-100)
518-Complete	518-Inner, 518-Outer, 518-Spacer, 5mm Cap with hole (C/N: 521-WGS-100)
519-Complete	519-Inner, 519-Outer, 519-Spacer, 5mm Cap with hole (C/N: 521-WGS-100)

Outer Tube Only

Catalog No.	I.D.	O.D.
517-Outer	4.20mm	4.97mm
518-Outer	4.20mm	4.97mm
519-Outer	4.20mm	4.97mm

Inner Tube Only

Catalog No.	I.D.	O.D.
517-Inner	2.34mm	3.30mm
518-Inner	1.96mm	2.97mm
519-Inner	1.50mm	2.52mm

Spacers

Catalog No.	I.D.	O.D.
517-Spacer	3.30mm	4.20mm
518-Spacer	2.97mm	4.20mm
519-Spacer	2.52mm	4.20mm

Microcell Small Volume NMR Insert

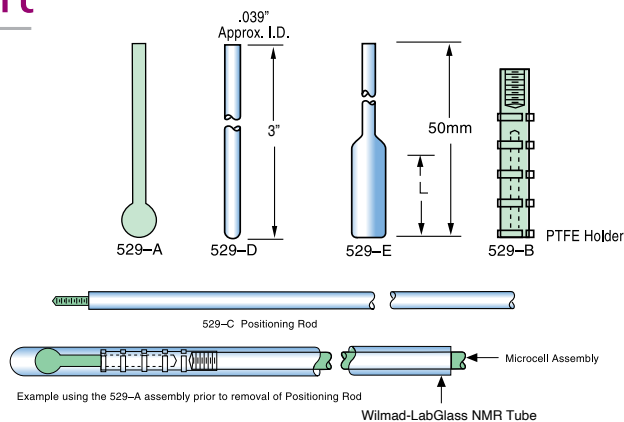
- Sample volume can be as little as 18µL
- Three different inserts with various shapes (Spherical Bulb, Capillary Tube, Cylindrical Bulb)
- Outer tube (Wilmad Precision Thin-Walled Tube) must be ordered separately depending on magnetic field strength
- Not recommended for variable temperature experiments.
- Use Wilmad PTFE Needles (C/N: 90630) with syringe to fill and clean sample

Positioning Components

Catalog No.	Fits Tube with O.D.	Description	Length
529-B	5.0mm	PTFE Holder	25mm
529-C	5.0mm	Positioning Rod	228mm

Spherical Bulb and Capillary Tube Microcell

Catalog No.	Fits Tube with O.D.	Description	Volume
529-A	5.0mm	Spherical Bulb	18µL
529-D	5.0mm	Capillary Tube	6µL

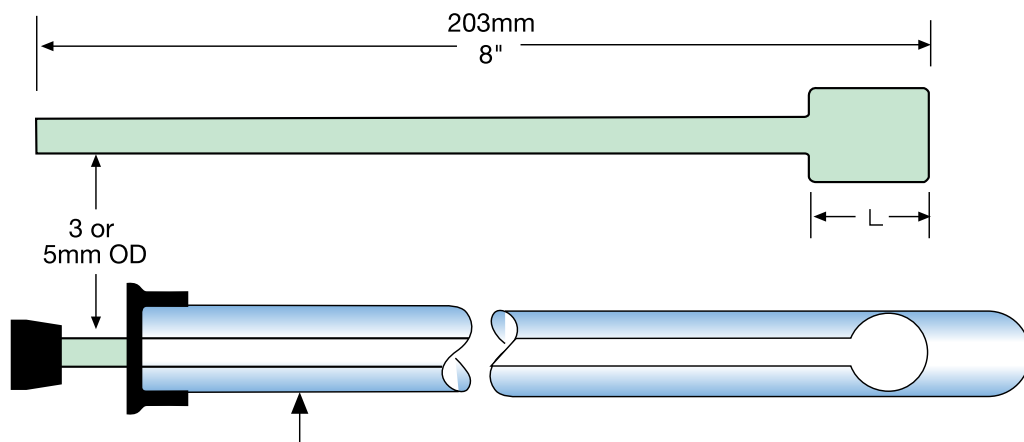


Cylindrical Bulb Microcell

Catalog No.	Fits Tube with O.D.	Description	Volume	Cylinder Length
529-E	5.0mm	Cylindrical Bulb	110 µL	12mm
529-E-5-L-15	5.0mm	Cylindrical Bulb	140 µL	15mm
529-E-5-L-20	5.0mm	Cylindrical Bulb	190 µL	20mm

Large Volume Microcell Insert

- Use with probe size between 8 to 20mm
- Add sample through NMR pipets
- Outer tube cap is provided to hold insert
- Custom sizes available



Spherical Bulb Insert

Catalog No.	Fits Tube with O.D.	Stem O.D.	Capacity
529-A-8	8.0mm	3.0mm	110 μ L
529-A-10	10.0mm	3.0mm	280 μ L
529-A-12	12.0mm	3.0mm	530 μ L
529-A-15	15.0mm	5.0mm	1020 μ L
529-A-16	16.0mm	5.0mm	1320 μ L
529-A-18	18.0mm	5.0mm	1970 μ L
529-A-20	20.0mm	5.0mm	2600 μ L

Cylindrical Bulb Insert

Catalog No.	Fits Tube with O.D.	Stem O.D.	Capacity	Cylinder Length
529-E-8	8.0mm	3.0mm	270 μ L	10mm

Bruker®MicroProbe/MicroCryoProbe NMR Tubes

Wilmad has been manufacturing small volume NMR Tubes with the highest quality in the industry to meet the demand in small volume NMR. Our Ultra-High Field MicroProbe Tube (>600MHz) is 10 times more precise in terms of camber and concentricity than instrument manufacturers' stock tubes. This technological advancement helps increase the shimming quality and SNR. The overall length for these tubes is 4" or 8", and the O.D. of the upper section is 5.0mm.



Bruker®MicroProbe/MicroCryoProbe NMR Tubes

Catalog No.	MHz Rating	Probe Type	Stem Length	Stem O.D.	Stem I.D.	Stem Volume	Overall Length
620-1A	500	Bruker®1.0 mm MicroProbe	50mm	1.00mm	0.80mm	25 µL	8"
620-1H	500	Bruker®1.7 mm MicroProbe	43.5mm	1.70mm	1.30mm	22 µL	4"
620-1B	500	Bruker®1.7 mm MicroCryoProbe	50mm	1.70mm	1.30mm	66 µL	8"
620-1G	500	Bruker®3.0/2.5 mm CryoProbe	43.5mm	2.00mm	1.60mm	87 µL	4"
620-1C	500	Bruker®3.0/2.5 mm CryoProbe	50mm	2.00mm	1.60mm	100 µL	8"
520-1A	800	Bruker®3.0/2.5 mm MicroProbe	50mm	2.50mm	2.16mm	1.83 µL	8"
620-1F	500	Bruker®3.0 mm CryoProbe	43.5mm	2.95mm	2.41mm	198 µL	4"
620-1D	500	Bruker®3.0 mm CryoProbe	50mm	2.95mm	2.41mm	228 µL	4"
620-1E	500	Bruker®3.0 mm CryoProbe	50mm	2.95mm	2.41mm	228 µL	8"

Agilent®(Varian®)ColdProbe 2.5 mm O.D. NMR Tubes

Agilent®(Varian®)ColdProbe 2.5 mm O.D. NMR Tubes

Catalog No.	MHz Rating	Probe Type	Length	O.D.	I.D.	Pack Qty.
WG-1364-2.5A-203M	400	Agilent® ColdProbe	8"	2.50mm	2.20mm	5

Shigemi Susceptibility Matched NMR Tubes

Shigemi's unique susceptibility matched tubes can reduce the sample volume down to 1/3 by minimizing the susceptibility gradients occurring at the solvent-air interface.



Shigemi® Susceptibility Matched NMR Tubes

Catalog No.	Outer Tube O.D.	Insert O.D.	Insert Length	Outer Tube Length	Bottom Length	Matched Solvent	Compatibility
CMS-005B	5.0mm	4.1mm	190mm	180mm	8mm	Chloroform-d	Bruker®
CMS-005J	5.0mm	4.1mm	190mm	180mm	12mm		JEOL®
CMS-005V	5.0mm	4.1mm	190mm	180mm	15mm		Agilent®(Varian®)
CMS-010B	10.0mm	8.9mm	200mm	190mm	8mm		Bruker®
CMS-010V	10.0mm	8.9mm	200mm	190mm	15mm		Agilent®(Varian®)
MMS-005B	5.0mm	4.1mm	190mm	180mm	8mm	Methanol-d ₄	Bruker®
MMS-005J	5.0mm	4.1mm	190mm	180mm	12mm		JEOL®
MMS-005V	5.0mm	4.1mm	190mm	180mm	15mm		Agilent®(Varian®)
MMS-010B	10.0mm	8.9mm	200mm	190mm	8mm		Bruker®
MMS-010V	10.0mm	8.9mm	200mm	190mm	15mm		Agilent®(Varian®)
DMS-005B	5.0mm	4.1mm	190mm	180mm	8mm	DMSO-d ₆	Bruker®
DMS-005J	5.0mm	4.1mm	190mm	180mm	12mm		JEOL®
DMS-005V	5.0mm	4.1mm	190mm	180mm	15mm		Agilent®(Varian®)
DMS-010B	10.0mm	8.9mm	200mm	190mm	8mm		Bruker®
DMS-010V	10.0mm	8.9mm	200mm	190mm	15mm		Agilent®(Varian®)
BMS-005B	5.0mm	4.1mm	190mm	180mm	8mm	Deuterium Oxide	Bruker®
BMS-005J	5.0mm	4.1mm	190mm	180mm	12mm		JEOL®
BMS-005V	5.0mm	4.1mm	190mm	180mm	15mm		Agilent®(Varian®)
BMS-010B	10.0mm	8.9mm	200mm	190mm	8mm		Bruker®
BMS-010V	10.0mm	8.9mm	200mm	190mm	15mm		Agilent®(Varian®)