

Vol. EN05

# SHIGEMI<sup>®</sup>

NMR/EPR Tubes

&

Accessories

**SHIGEMI Co., LTD.**

2-4-15 Nakanosanno Hachioji  
TOKYO JAPAN

Pone:+81-42-624-2207 FAX:+81-42-622-0937 [info@shigemi.co.jp](mailto:info@shigemi.co.jp)  
<https://www.shigemi.co.jp/en-introduction>

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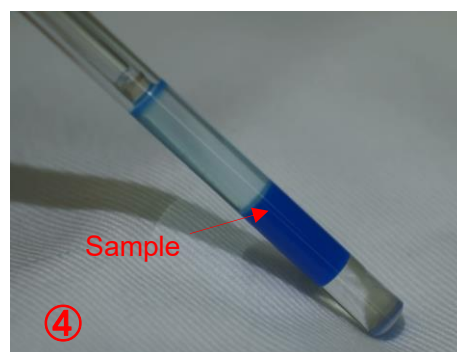
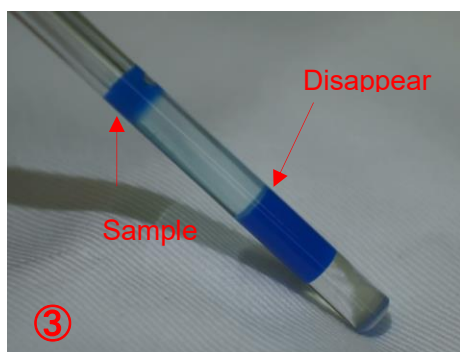
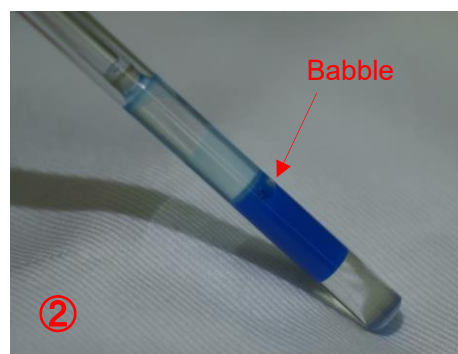
# Symmetrical MICRO NMR Tubes

These unique NMR microtubes are made out of a special type of hard glass with excellent chemical durability. They are magnetic susceptibility matched to each of the following solvents: CDCL<sub>3</sub>, CD<sub>3</sub>OD, D<sub>2</sub>O, DMSO

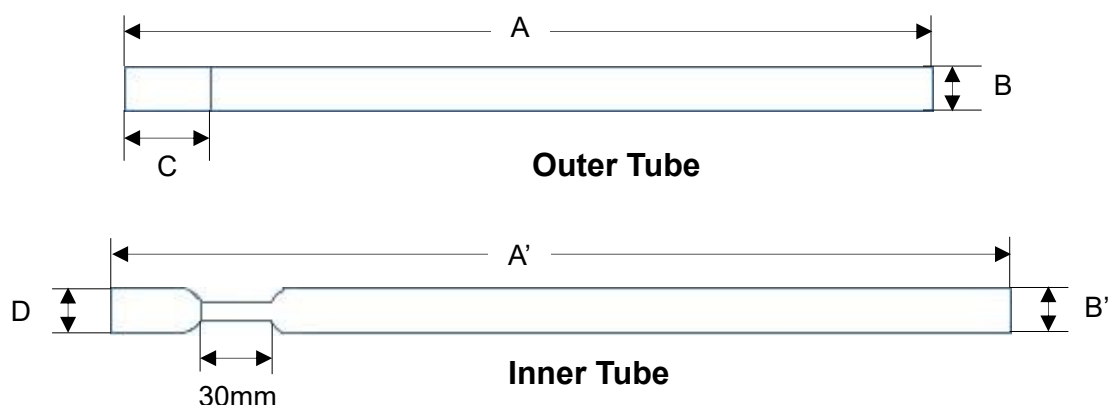
Therefore, the best resolution of a sample can be obtained in each of these solutions with minimal amounts of sample. Yet, the use of a small amount of solution will not affect the spectral resolution or the sideband.

## How to use Symmetrical MICRO NMR Tubes

- ★ Do not spinning
- ★ We do not garanty auto shimming  
Plaese make shim file from 0
- ★ Plaese take out bables
  - ① You turn in an inner tubeslowly
  - ② Brief stop when a inner tube tach at sample surface.
  - ③ You push quick a inner tube
  - ④ Bables was disapred return an inner tube right position



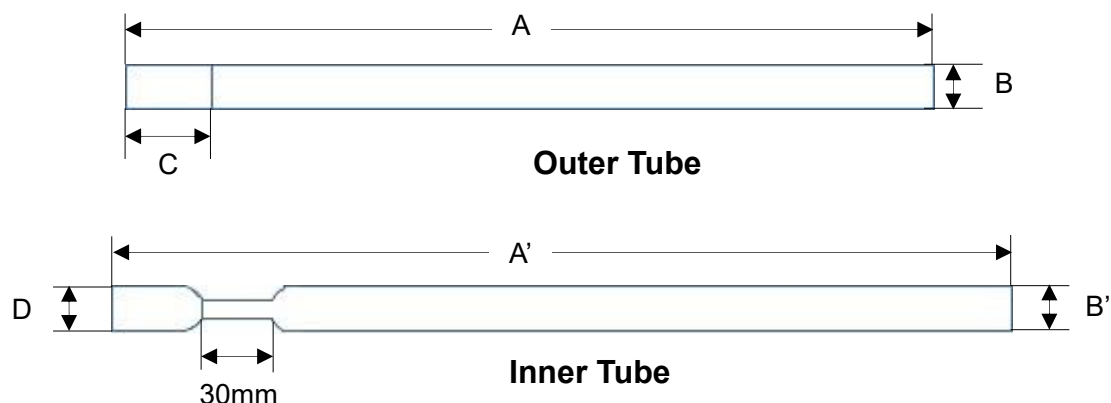
# Symmetrical MICRO NMR Tubes for D<sub>2</sub>O



Parts N.O.		Outer Tube(mm)			Inner Tube(mm)			Price 1set = 1 outer tube and 1 inner tube JPY
		Length A	O.D. B	Mached Glass C	Length A'	O.D. B'	Mached glass D	
2.5mmφ	BMS-0025	120	2.5 +0 -0.01	6	115	1.8	1.86 +0 -0.01	7,000
3mmφ	BMS-003	180	3.00 -0.01 -0.02	10	190	2.4	2.47 +0 -0.01	8,000
4mmφ	BMS-004B	180	4.000 +0.005 -0.010	8	190	3.1	3.16 +0 -0.01	9,000
	BMS-004J	180	4.000 +0.005 -0.010	12	190	3.1	3.16 +0 -0.01	9,000
	BMS-005V	180	4.000 +0.005 -0.010	15	190	3.1	3.16 +0 -0.01	9,000
5mmφ	BMS-005B	180	4.965 +0.005 -0.010	8	190	4.1	4.17 +0 -0.01	9,000
	BMS-005J	180	4.965 +0.005 -0.010	12	190	4.1	4.17 +0 -0.01	9,000
	BMS-005V	180	4.965 +0.005 -0.010	15	190	4.1	4.17 +0 -0.01	9,000
8mmφ	BMS-008BJ	190	7.98 ±0.01	10	200	6.9	6.97 +0 -0.01	18,000
	BMS-008V	190	7.98 ±0.01	15	200	6.9	6.97 +0 -0.01	20,000
10mmφ	BMS-010BJ	190	9.98 +0 -0.01	10	200	8.9	8.97 +0 -0.01	22,000
	BMS-010V	190	8.98 ±0.01	15	200	8.9	8.97 +0 -0.01	25,000



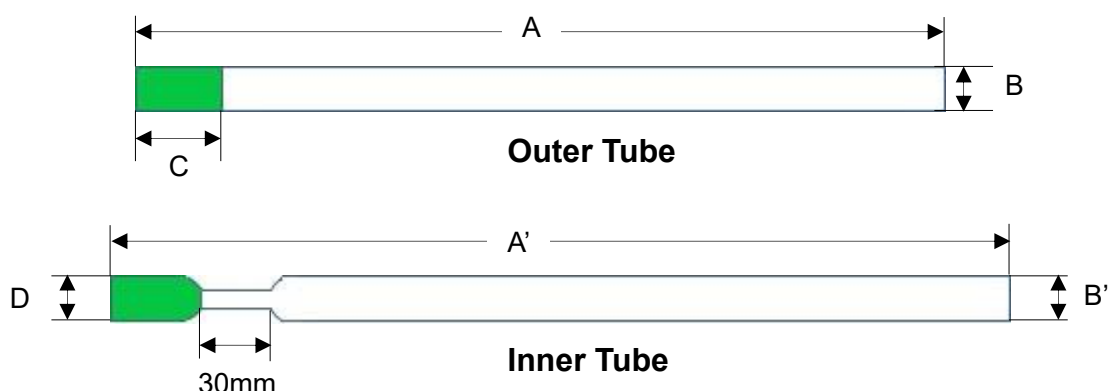
# Symmetrical MICRO NMR Tubes for CDCl<sub>3</sub>



Parts N.O.	Outer Tube(mm)			Inner Tube(mm)			Price 1set = 1 outer tube and 1 inner tube JPY	
	Length A	O.D B	Mached glass C	Length A'	O.D. B'	Mached glass D		
2.5mmφ CMS-0025	120	2.5 +0 -0.01	6	115	1.8	1.86 +0 -0.01	7,000	
3mmφ CMS-003	180	3.00 -0.01 -0.02	10	190	2.4	2.47 +0 -0.01	8,000	
5mmφ	CMS-005B	180	4.965 +0.005 -0.010	8	190	4.1	4.17 +0 -0.01	9,000
	CMS-005J	180	4.965 +0.005 -0.010	12	190	4.1	4.17 +0 -0.01	9,000
	CMS-005V	180	4.965 +0.005 -0.010	15	190	4.1	4.17 +0 -0.01	9,000
8mmφ	CMS-008BJ	190	7.98 ±0.01	10	200	6.9	6.97 +0 -0.01	16,000
	CMS-008V	190	7.98 ±0.01	15	200	6.9	6.97 +0 -0.01	18,000
10mmφ	CMS-010BJ	190	9.98 +0 -0.01	10	200	8.9	8.97 +0 -0.01	17,000
	CMS-010V	190	8.98 ±0.01	15	200	8.9	8.97 +0 -0.01	19,000



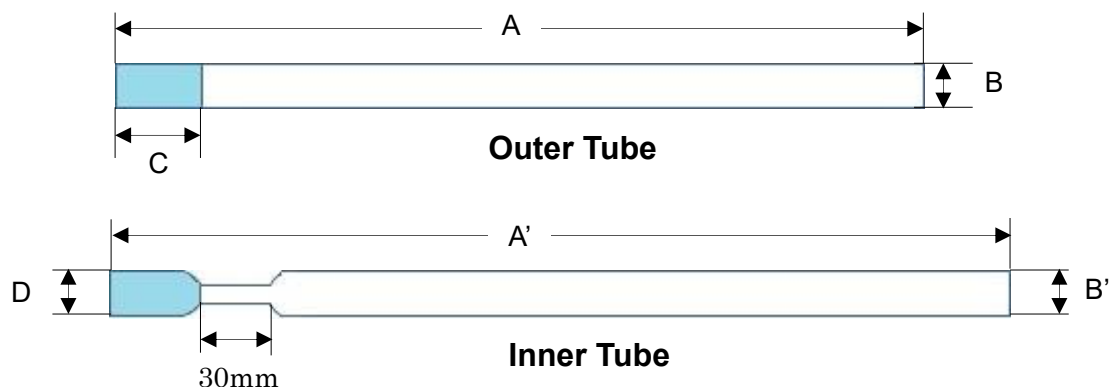
# Symmetrical MICRO NMR Tubes for DMSO (CD<sub>3</sub>)<sub>2</sub>SO, C<sub>6</sub>D<sub>6</sub>, C<sub>5</sub>D<sub>5</sub>N



Parts N.O.		Outer Tube(mm)			Inner Tube(mm)			Price 1set = 1 outer tube and 1 inner tube JPY
		Length A	O.D. B	Mached glass C	Length A'	O.D. B'	Mached glass D	
2.5mmφ	DMS-0025	120	2.5 +0 -0.01	6	115	1.8	1.86 +0 -0.01	7,000
3mmφ	DMS-003	180	3.00 -0.01 -0.02	10	190	2.4	2.47 +0 -0.01	8,000
5mmφ	DMS-005B	180	4.965 +0.005 -0.010	8	190	4.1	4.17 +0 -0.01	10,000
	DMS-005J	180	4.965 +0.005 -0.010	12	190	4.1	4.17 +0 -0.01	10,000
	DMS-005V	180	4.965 +0.005 -0.010	15	190	4.1	4.17 +0 -0.01	10,000
8mmφ	DMS-008BJ	190	7.98 ±0.01	10	200	6.9	6.97 +0 -0.01	16,000
	DMS-008V	190	7.98 ±0.01	15	200	6.9	6.97 +0 -0.01	18,000
10mmφ	DMS-010BJ	190	9.98 +0 -0.01	10	200	8.9	8.97 +0 -0.01	17,000
	DMS-010V	190	8.98 ±0.01	15	200	8.9	8.97 +0 -0.01	19,000



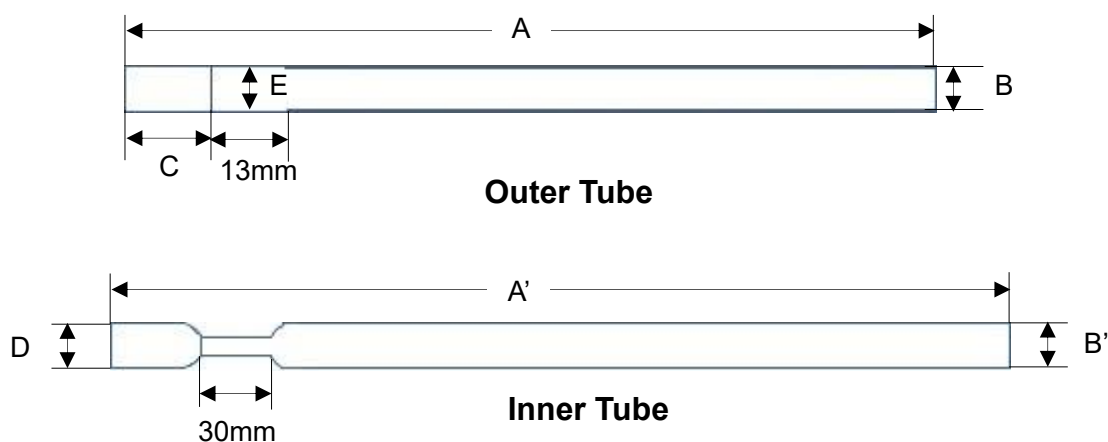
# Symmetrical MICRO NMR Tubes for CD<sub>3</sub>OD, CD<sub>3</sub>CN



Parts N.O.	Outer Tube(mm)			Inner Tube(mm)			Price 1set = 1 outer tube and 1 inner tube JPY	
	Length A	O.D B	Mached glass C	Length A'	O.D. B'	Mached glass D		
2.5mmφ	MMS-0025	120	2.5 +0 -0.01	6	115	1.8	1.86 +0 -0.01	7,000
3mmφ	MMS-003	180	3.00 -0.01 -0.02	10	190	2.4	2.47 +0 -0.01	8,000
5mmφ	MMS-005B	180	4.965 +0.005 -0.010	8	190	4.1	4.17 +0 -0.01	10,000
	MMS-005J	180	4.965 +0.005 -0.010	12	190	4.1	4.17 +0 -0.01	10,000
	MMS-005V	180	4.965 +0.005 -0.010	15	190	4.1	4.17 +0 -0.01	10,000
8mmφ	MMS-008BJ	190	7.98 ±0.01	10	200	6.9	6.97 +0 -0.01	16,000
	MMS-008V	190	7.98 ±0.01	15	200	6.9	6.97 +0 -0.01	18,000
10mmφ	MMS-010BJ	190	9.98 +0 -0.01	10	200	8.9	8.97 +0 -0.01	17,000
	MMS-010V	190	8.98 ±0.01	15	200	8.9	8.97 +0 -0.01	19,000



# Thin wall Symmetrical MICRO NMR Tubes for D<sub>2</sub>O

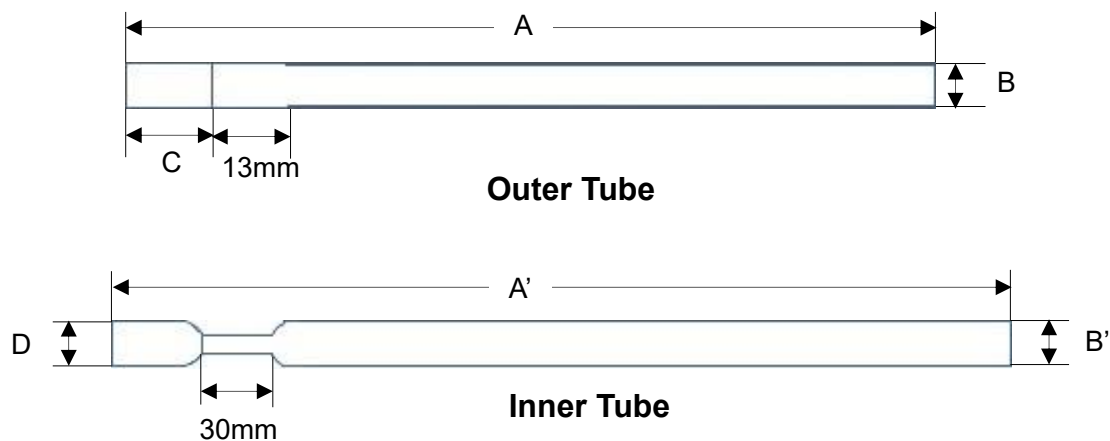


Parts N.O.		Outer Tube(mm)				Inner Tube(mm)			Price(JPY) 1set = 1 outer tube and 1 inner tube
		Length A	O.D. B	Mached Glass C	Thin Wall I.D. E	Length A'	O.D. B'	Mached Glass O.D. D	
5mmφ	BMS-005TB	180	4.965 +0.005 -0.010	8	4.52	190	4.1	4.17 +0 -0.01	10,000
	BMS-005TJ	180	4.965 +0.005 -0.010	12	4.52	190	4.1	4.17 +0 -0.01	10,000
	BMS-005TV	180	4.965 +0.005 -0.010	15	4.52	190	4.1	4.17 +0 -0.01	10,000





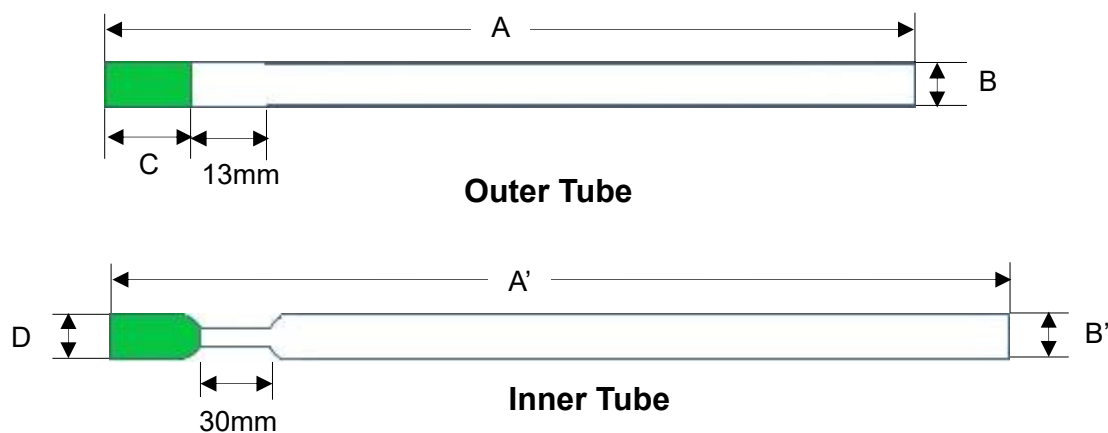
# Thin wall Symmetrical MICRO NMR Tubes for $\text{CDCl}_3$



Parts N.O.		Outer Tube(mm)				Inner Tube(mm)			Price(JPY) 1set = 1 outer tube and 1 inner tube
		Length A	O.D. B	Mached Glass C	Thin Wall I.D. E	Length A'	O.D. B'	Mached Glass O.D. D	
5mm $\phi$	CMS-005TB	180	4.965 +0.005 -0.010	8	4.52	190	4.1	4.17 +0 -0.01	10,000
	CMS-005TJ	180	4.965 +0.005 -0.010	12	4.52	190	4.1	4.17 +0 -0.01	10,000
	CMS-005TV	180	4.965 +0.005 -0.010	15	4.52	190	4.1	4.17 +0 -0.01	10,000



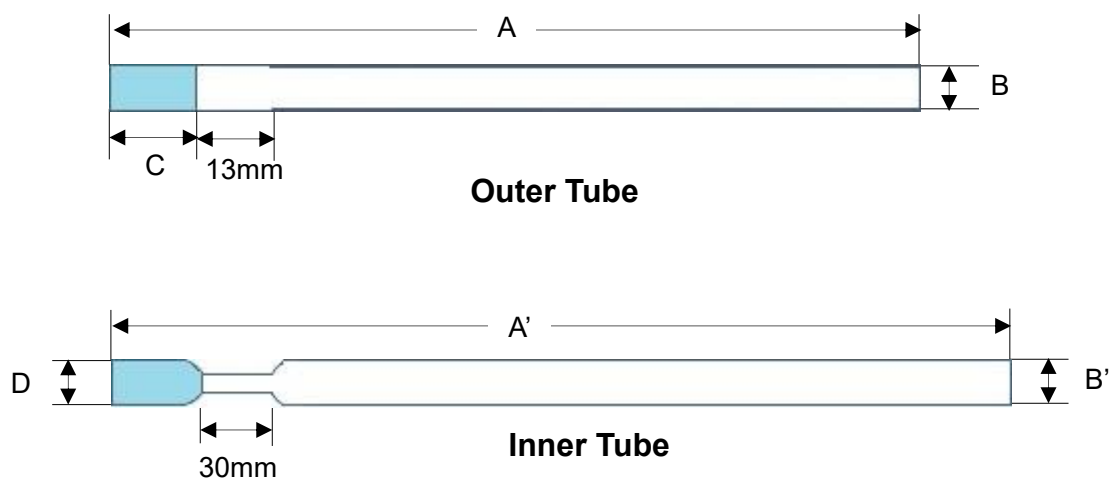
# Thin wall Symmetrical MICRO NMR Tubes for DMSO (CD<sub>3</sub>)<sub>2</sub>SO , Benzene C<sub>6</sub>D<sub>6</sub> , Pyridine C<sub>5</sub>D<sub>5</sub>N



Parts N.O.		Outer Tube(mm)				Inner Tube(mm)			Price(JPY) 1set = 1 outer tube and 1 inner tube
		Length A	O.D. B	Muched Glass C	Thin Wall I.D. E	Length A'	O.D. B'	Mached Glass O.D. D	
5mmφ	DMS-005TB	180	4.965 +0.005 -0.010	8	4.52	190	4.1	4.17 +0 -0.01	11,000
	DMS-005TJ	180	4.965 +0.005 -0.010	12	4.52	190	4.1	4.17 +0 -0.01	11,000
	DMS-005TV	180	4.965 +0.005 -0.010	15	4.52	190	4.1	4.17 +0 -0.01	11,000



# Thin wall Symmetrical MICRO NMR Tubes for Methanol CD<sub>3</sub>OD, Acetonitrile CD<sub>3</sub>CN



Parts N.O.		Outer Tube(mm)				Inner Tube(mm)			Price(JPY) 1set = 1 outer tube and 1 inner tube
		Length A	O.D. B	Muched Glass C	Thin Wall I.D. E	Lengt h A'	O.D. B'	Mached Glass O.D. D	
5mmφ	MMS-005TB	180	4.965 +0.005 -0.010	8	4.52	190	4.1	4.17 +0 -0.01	11,000
	MMS-005TJ	180	4.965 +0.005 -0.010	12	4.52	190	4.1	4.17 +0 -0.01	11,000
	MMS-005TV	180	4.965 +0.005 -0.010	15	4.52	190	4.1	4.17 +0 -0.01	11,000



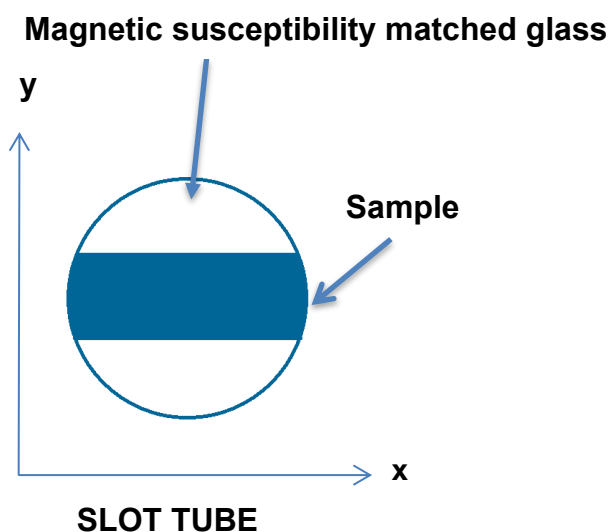
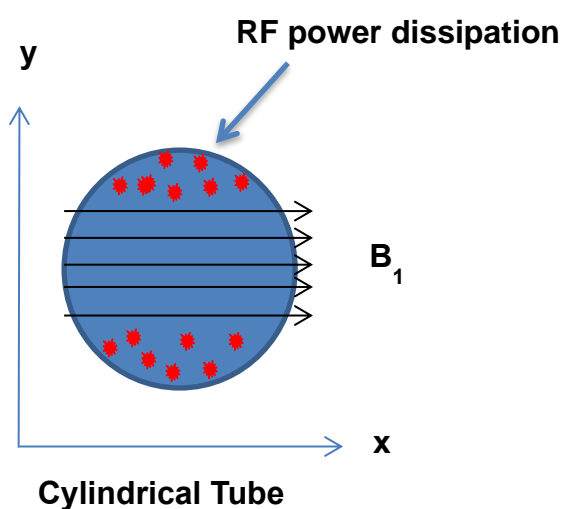
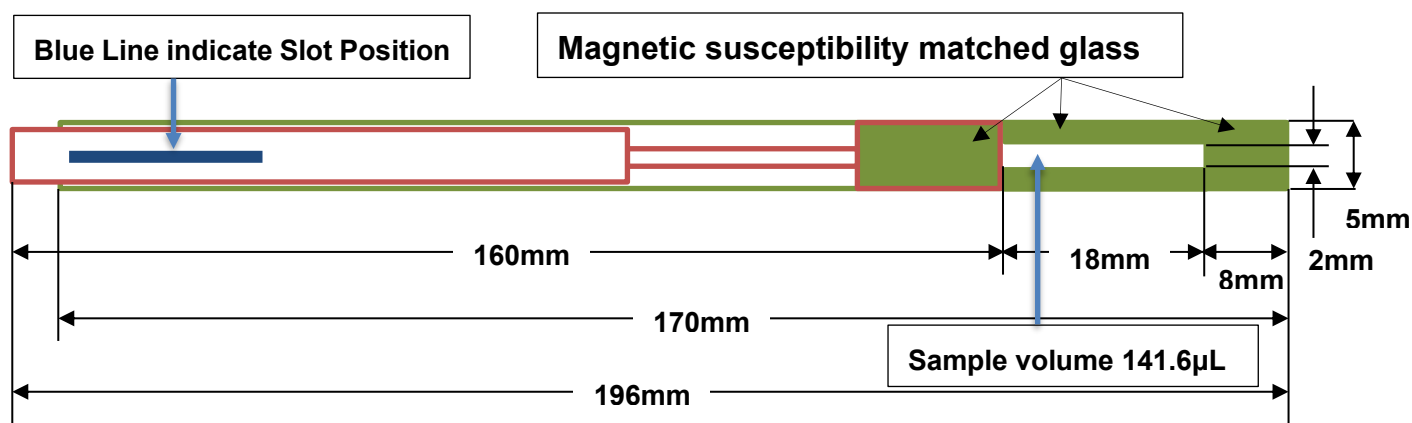
# SLOT TUBE

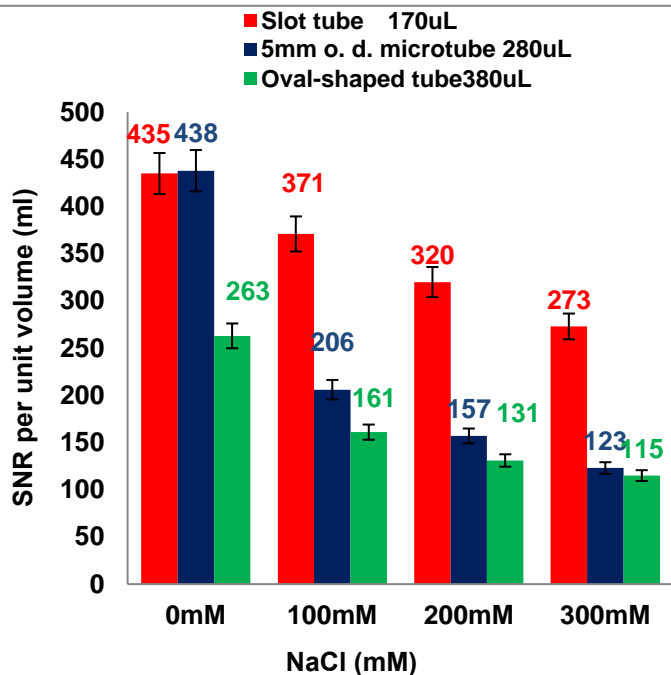
## For High concentration electrolyte samples

The SHIGEMI Slot Tube provides the highest sensitivity and shortest 90 degree pulse width with any probes when working with lossy samples such as proteins in aqueous solutions containing high concentrations of electrolyte as salt.

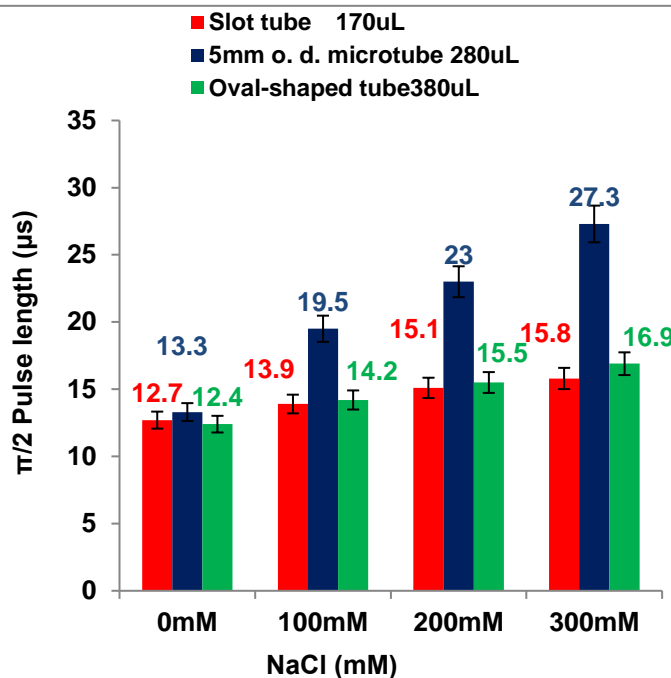
### Benefit

- ★ Avoid the hot spot of RF power dissipation.
- ★ Able to obtain the best S/N ratio than any other NMR sample tubes.
- ★ Provide the shortest 90 degree pulse width than any NMR sample tubes.
- ★ Has already been confirmed working well with a Cryo™ probe (Bruker) 600, 950MHz and a Cold Probe (Varian/Agilent) 600MHz.





SNR per unit volume(ml) in different tubes  
And salt concentrations



$\pi/2$  Pulse length ( $\mu\text{s}$ ) in different tubes  
and salt concentrations

Data acquired at 14.1T (600 MHz Cryo<sup>TM</sup>Probe) for the ubiquitin samples of 0.3mM of [U-<sup>13</sup>C/<sup>15</sup>N] containing 10mM sodium phosphate

### SLOT TUBE

Magnetic susceptibility matched glass



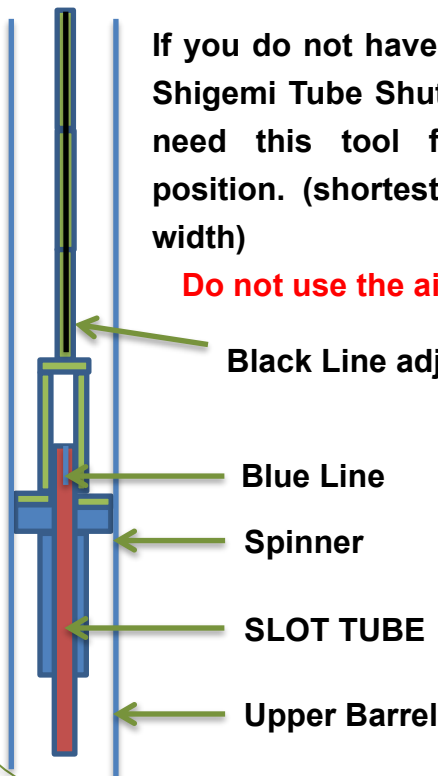
Slot for sample  
144.6 $\mu\text{L}$

SBMS 1 set 25,000JPY

### Positioning tool

If you do not have "Bruker Shaped Shigemi Tube Shuttle (5mm)", you need this tool for fixing exact position. (shortest 90 degree puls width)

**Do not use the air-lift function.**

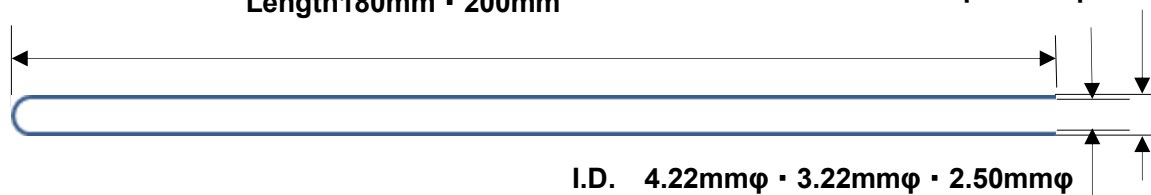


Positioning tool 1 set 150,000JPY

# Ultra Precision NMR Sample Tubes

Length 180mm · 200mm

O.D. 5mmφ · 4mmφ · 3mmφ



I.D. 4.22mmφ · 3.22mmφ · 2.50mmφ

## 5mmφ Ultra Precision NMR Sample Tubes **Thin wall**

**DURAN®**

Parts N.O.	Dimension (mm)			Tolerance (μm)		Price (1piece) JPY
	Length	O.D.	I.D.	Straightness	wall thickness control	
PS-001-7	180	4.965 +0.005 -0.010	4.220 +0.01 -0	10	5	1,900
PS-001-8	200	4.965 +0.005 -0.010	4.220 +0.01 -0	10	5	1,950
PS-002-7	180	4.965 +0.005 -0.010	4.220 +0.01 -0	15	10	1,600
PS-002-8	200	4.965 +0.005 -0.010	4.220 +0.01 -0	15	10	1,650
PS-003-7	180	4.965 +0.005 -0.010	4.220 +0.01 -0	15	20	1,400
PS-003-8	200	4.965 +0.005 -0.010	4.220 +0.01 -0	15	20	1,450
PS-004-7	180	4.965 +0.005 -0.010	4.220 +0.01 -0	20	25	900
PS-004-8	200	4.965 +0.005 -0.010	4.220 +0.01 -0	20	25	950

## 4mmφ Ultra Precision NMR Sample Tubes **Thin wall**

Parts N.O.	Dimension (mm)			Tolerance (μm)		Price (1piece) JPY
	Length	O.D.	I.D.	Straightness	wall thickness control	
PR-001	180	4 +0 -0.01	3.22 +0.010 -0	15	10	2,000
PR-002	180	4 +0 -0.01	3.22 +0.010 -0	20	20	1,500

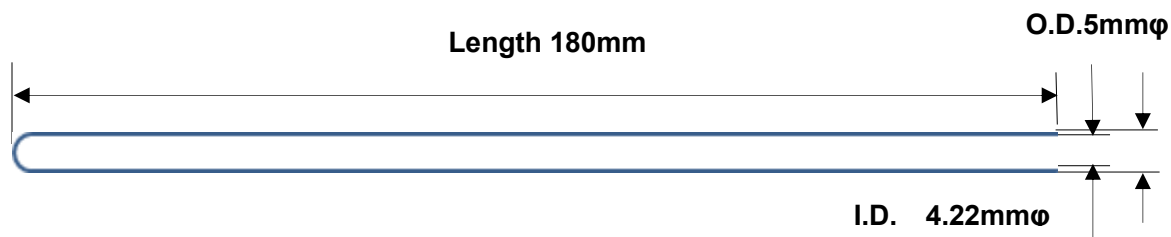
## 3mmφ Ultra Precision NMR Sample Tubes **Thin wall**

Parts N.O.	Dimension (mm)			Tolerance (μm)		Price (1piece) JPY
	Length	O.D.	I.D.	Straightness	wall thickness control	
PN-001	180	3.0 +0.01 -0.02	2.5 +0.01 -0	15	5	2,000
PN-002	180	3.0 +0.01 -0.02	2.5 +0.01 -0	25	20	1,500



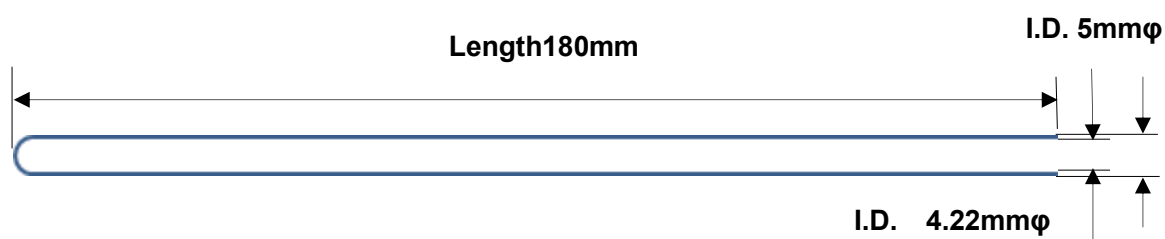
# Economy NMR Sample Tubes

For routine examination. A quality as same PS-004-7 as Ultra Precision Tubes  
We can sale 100 tubes only.



## 5mm Economy NMR Sample Tubes **Thin Wall** DURAN®

Parts N.O.	Dimension (mm)			Tolerance ( $\mu\text{m}$ )		Price JPY	A unit
	Length	O.D.	I.D.	Straightness	Wall thickness control		
PS-005	180	4.965 +0.005 -0.010	4.220 +0.01 -0	25	40	65,000	100 peace



★Matreal is Brosilicate glass ASTM Type1 Class A as DURAN® of Shott AG

★You can use V.T. examination

★We can sale 200peaces only

DURAN®

## 5mm Disposable NMR Sample Tubes **Thin Wall**

Parts N.O.	Dimension (mm)			Straightness( $\mu\text{m}$ )	price
	Length	O.D.	I.D.		
EC-57	180	4.965 +0.005 -0.010	4.220 $\pm 0.10$	30	200PCS 44,000
EC-58	200	4.965 +0.005 -0.010	4.220 $\pm 0.10$	30	46,000



# 5mm $\phi$ Micro Bottom Tubes

## Benefit

- ★ Become high concentration
- ★ Save samples & solvent
- ★ Can be set with 5mm spinner
- ★ Much better DOSY & Diffusion (small amount of Temperature gradient)
- ★ Can be used each probe as ☺

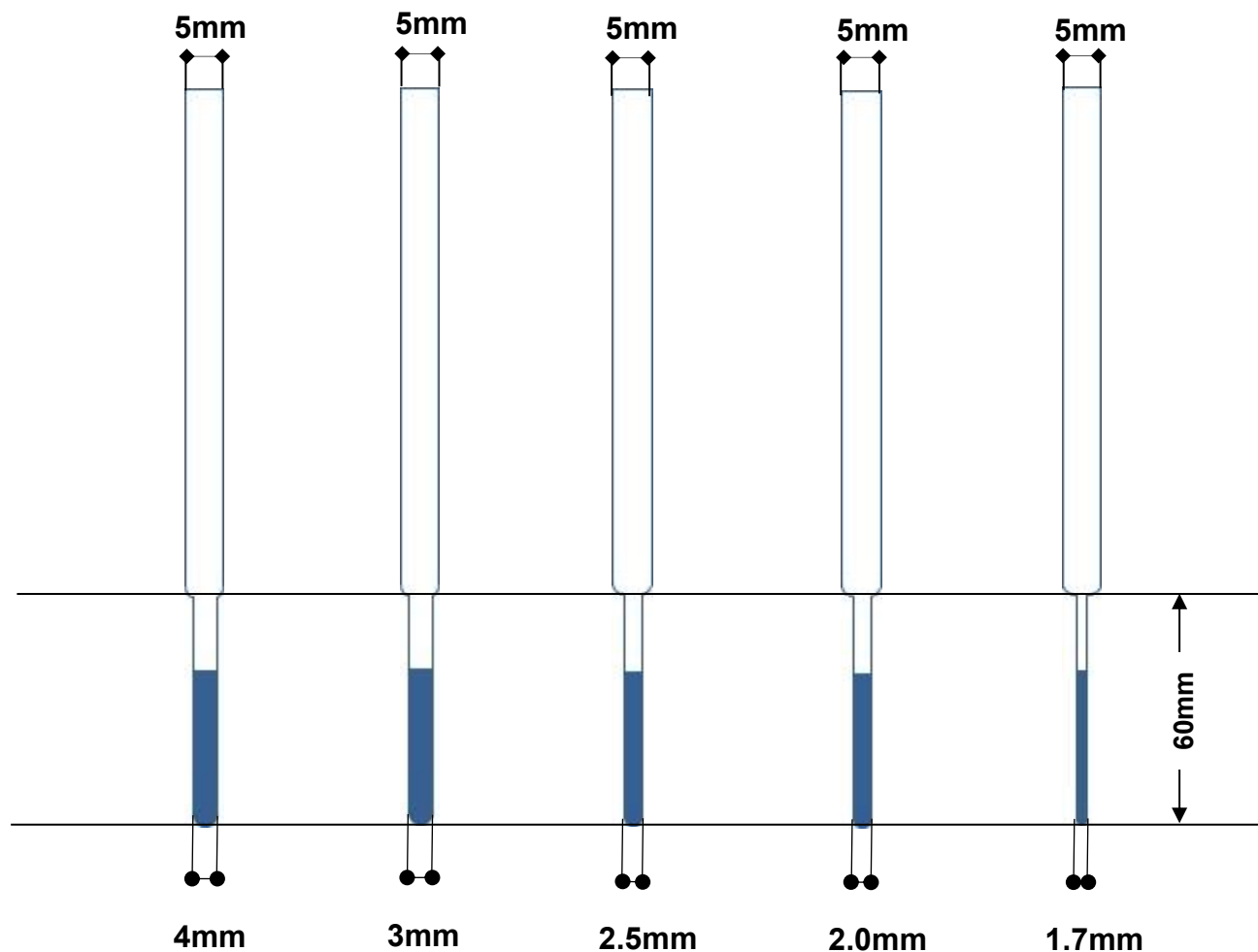
★ Matreal is Brosilicate glass ASTM Type1 Class A as DURAN® of Shott AG

★ You can use V.T. examination





# 5mm $\phi$ Micro Bottom Tubes



## Volume comparison

Sample height	4mm (SP-505)	3mm (SP-504)	2.5mm (SP-503)	2.0mm (SP-502)	1.7mm (SP-501)	5mm Thin wall
30mm	240uL	145 uL	84 uL	53 uL	34 uL	410uL
40mm	321 uL	194 uL	113 uL	70 uL	45 uL	549uL

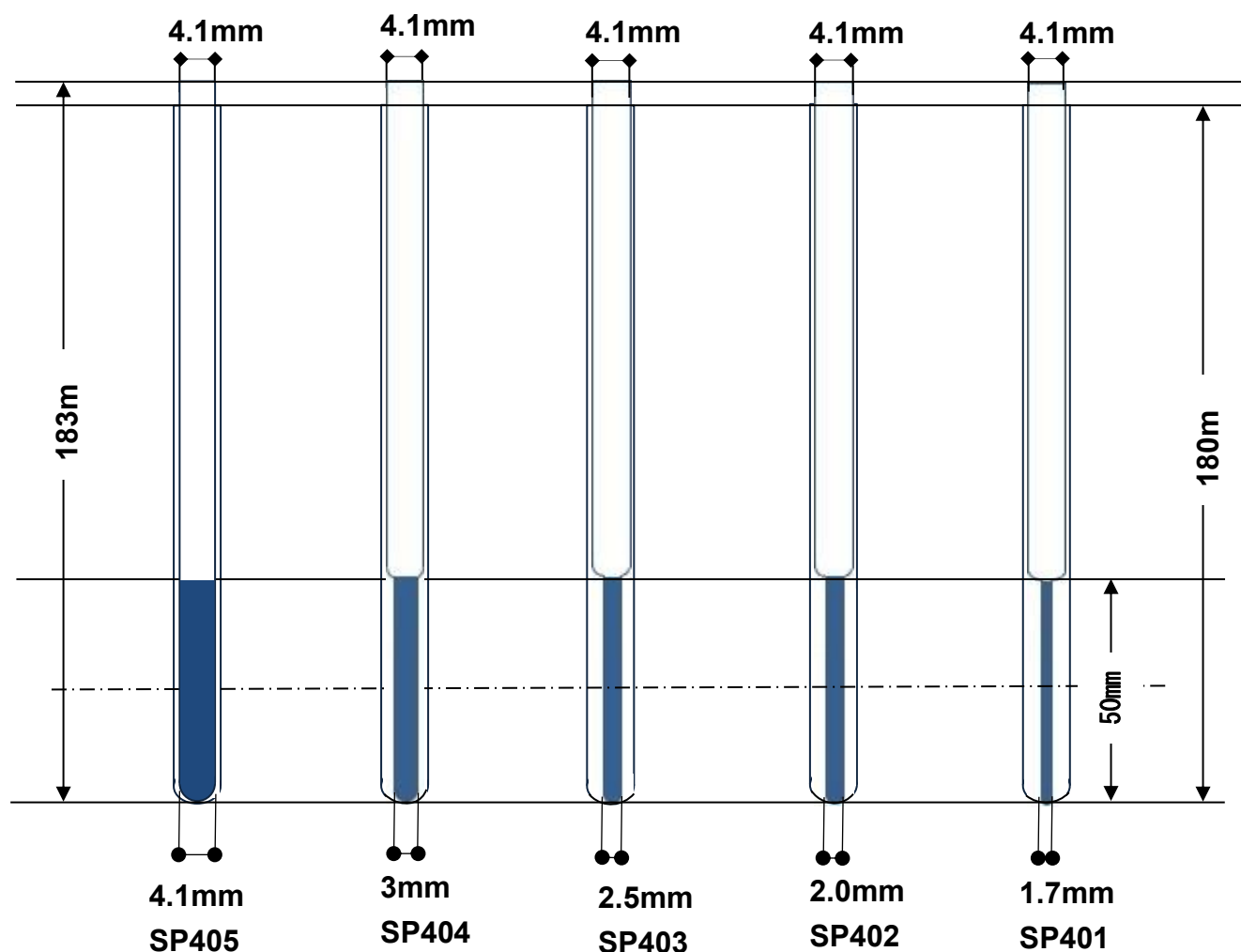
Parts N.O.	Overall Length	Upper O.D.	Stem Length	Stem O.D.	Stem I.D.	List Price(JPY)
SP-501	180mm	5mm	60mm	1.7mm	1.2mm $\pm$ 0.01mm	3,500
SP-502	180mm	5mm	60mm	2mm	1.5mm $\pm$ 0.01mm	3,500
SP-503	180mm	5mm	60mm	2.5mm	1.9mm $\pm$ 0.01mm	2,500
SP-504	180mm	5mm	60mm	3mm	2.5mm $\pm$ 0.01mm	2,500
SP-505	180mm	5mm	60mm	4mm	3.2mm $\pm$ 0.01mm	2,500



# 5mm $\phi$ Coaxial NMR tube set

When you do not want to mix sample with solvent or to compare with the standard sample  
We strong recommend the items.

We sale an outer tube(5mmO.D.), an inner tube with cap.



P.N.	Inner Tube Stem O.D.	Inner Tube Volume 40mm high	Outer Tube volume (When setting with an inner tube and an outer tube) 40mm
SP-401	1.7mm	45uL	459uL
SP-402	2mm	70uL	425uL
SP-403	2.5mm	113uL	355uL
SP-404	3mm	194uL	270uL
SP-405	4.1mm	317uL	55uL
SPT-401	1.7mm	45uL	547uL
SPT-402	2mm	70uL	512uL
SPT-403	2.5mm	113uL	442uL
SPT-404	3mm	194uL	257uL
SPT-405	4.1mm	317uL	142uL



# 5mmφ Coaxial NMR tube set

With PS-001-7(Thin wall Outer Tube O.D. 5mm)

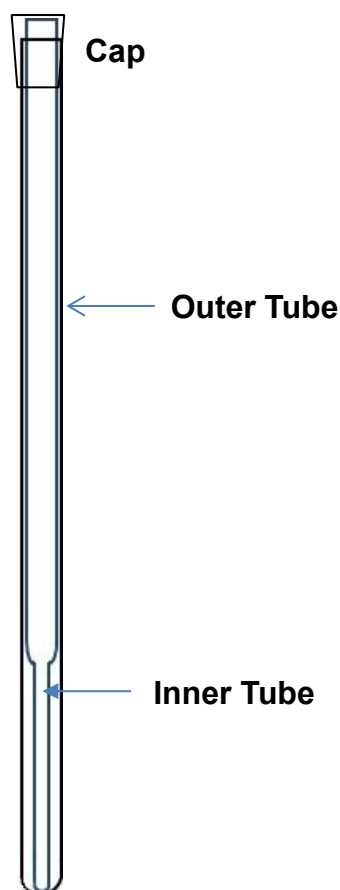
## Inner tube detail

P.N.	Length	O.D. Inner tube	Stem Length	Stem O.D	Stem I.D.	tolerance	1 Set(JPY)
SP-401	183mm	4.1mm	50mm	1.7mm	1.2mm	±0.01mm	5,850
SP-402	183mm	4.1mm	50mm	2mm	1.5mm	±0.01mm	5,850
SP-403	183mm	4.1mm	50mm	2.5mm	1.9mm	±0.01mm	4,850
SP-404	183mm	4.1mm	50mm	3mm	2.5mm	±0.01mm	4,850
SP-405	183mm	4.1mm	50mm	4.1mm	3.2mm	±0.01mm	4,850

With PST-001-7(Ultra thin wall Outer Tube O.D. 5mm)

## Inner tube detail

P.N.	Length	O.D.	Stem Length	Stem O.D	Stem I.D.	tolerance	1 Set(JPY)
SPT-401	183mm	4.1mm	50mm	1.7mm	1.2mm	±0.01mm	6,850
SPT-402	183mm	4.1mm	50mm	2mm	1.5mm	±0.01mm	6,850
SPT-403	183mm	4.1mm	50mm	2.5mm	1.9mm	±0.01mm	5,850
SPT-404	183mm	4.1mm	50mm	3mm	2.5mm	±0.01mm	5,850
SPT-405	183mm	4.1mm	50mm	4.1mm	3.2mm	±0.01mm	5,850



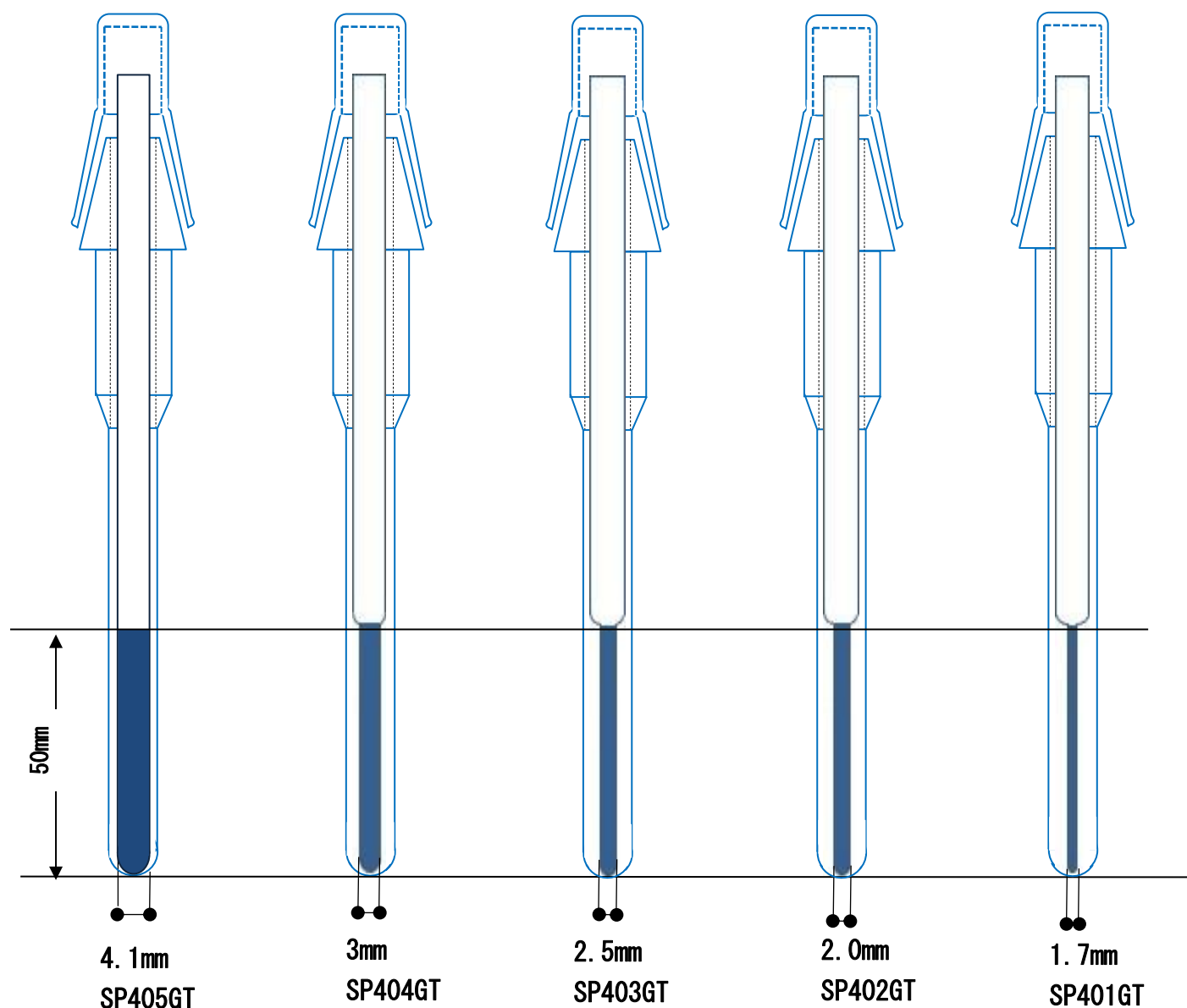
SPARE PARTS	JPY
SP-401INNER TUBE	3,500
SP-402INNER TUBE	3,500
SP-403INNER TUBE	2,500
SP-404INNER TUBE	2,500
SP-405INNER TUBE	2,500
PS-001 OUTER TUBE	1,900
PST-001 OUTER TUBE	3,000
CT-005(CAP)	600

We cannot guarantee for combinations with outer or inner tubes from other manufacturers.



# 5mm $\phi$ Coaxial GAS tight NMR tube set

A coaxial tube that can block outside air. It is effective for samples that are sensitive to vacuum, nitrogen substitution, evaporation, water absorption, etc. Apply vacuum grease to the edge of the lid before use. Be careful not to let grease get into the sample tube. It can withstand long-term sealing.



**With PS-001-7GT(Thin wall GAS tight Outer Tube O.D. 5mm)**

**Inner tube detail**

P.N.	O.D. Inner tube	Stem Length	Stem O.D	Stem I.D.	tolerance	1 Set(JPY)
SP-401GT	4.1mm	50mm	1.7mm	1.2mm	±0.01mm	13,000
SP-402GT	4.1mm	50mm	2mm	1.5mm	±0.01mm	13,000
SP-403GT	4.1mm	50mm	2.5mm	1.9mm	±0.01mm	12,000
SP-404GT	4.1mm	50mm	3mm	2.5mm	±0.01mm	12,000
SP-405GT	4.1mm	50mm	4.1mm	3.2mm	±0.01mm	12,000

**With PST-001-7GT(Ultra Thin wall GAS tight Outer Tube O.D. 5mm)**

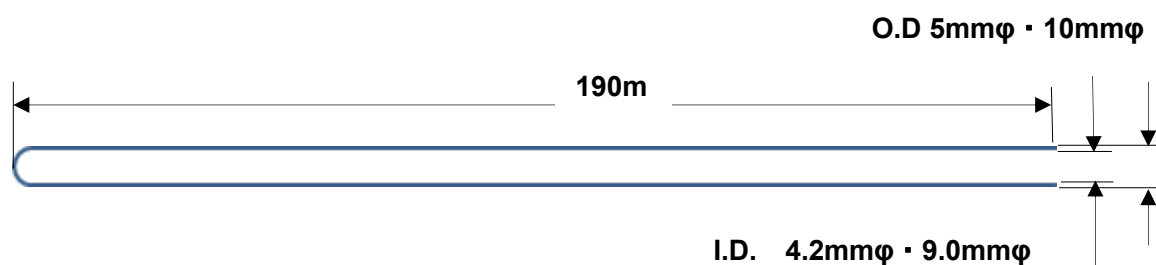
**Inner tube detail**

P.N.	O.D. Inner tube	Stem Length	Stem O.D	Stem I.D.	tolerance	1 Set(JPY)
SPT-401GT	4.1mm	50mm	1.7mm	1.2mm	±0.01mm	14,000
SPT-402GT	4.1mm	50mm	2mm	1.5mm	±0.01mm	14,000
SPT-403GT	4.1mm	50mm	2.5mm	1.9mm	±0.01mm	13,000
SPT-404GT	4.1mm	50mm	3mm	2.5mm	±0.01mm	13,000
SPT-405GT	4.1mm	50mm	4.1mm	3.2mm	±0.01mm	13,000

SPARE PARTS		JPY
SP-401INNER TUBE		3,500
SP-402INNER TUBE		3,500
SP-403INNER TUBE		2,500
SP-404INNER TUBE		2,500
SP-405INNER TUBE		2,500
PS-001GT	GAS Tight OUTER TUBE	9,500
PST-001GT	GAS Tight OUTER TUBE	10,500



# Quartz NMR Tubes



Dimension (mm)						
Parts N.O.	Length	O.D.	I.D.	Price/a peace	Material	For
SS-002	190	4.965 -0.005 -0.010	4.20 ±0.1	2,200	Fused Silica	NMR
SS-0010	190	9.98 ±0.01	9.0 ±0.1	4,000	Fused Silica	NMR

Fused Silica	Metallic impurity (ppm)										OH radical
	Na	K	Li	Mg	Mn	Fe	Ca	Al	Tl	Zr	
	1.3	<3.0	1.0	0.5	0.1	1.9	1.8	20.3	1.4	2.4	<5

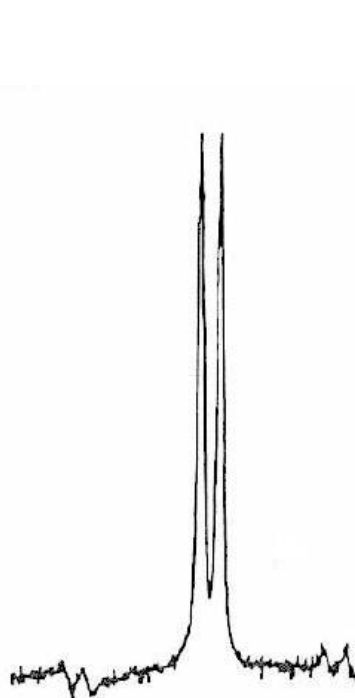


# Ultra thin wall NMR Tubes

## Benefit

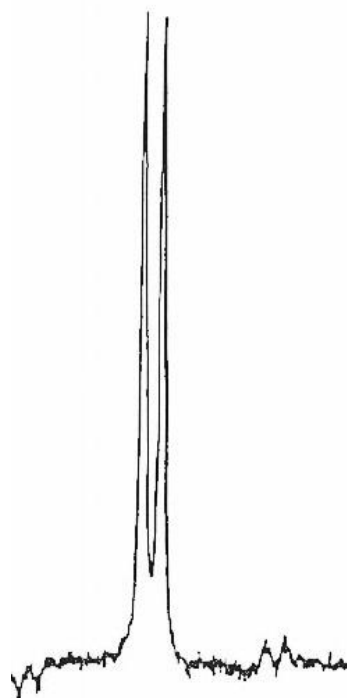
- ★ Tube thickness effect Signal to Noise
- ★ Volume gain
- ★ Sample approach RF coil
- ★ Better resolution of NMR spectra (especially Ultra High Field Magnet)
- ★ Easy to use

★ 25% gain Signal to Noise



Ultra Precision NMR Sample Tubes

Figure 1



Thin wall NMR Tubes

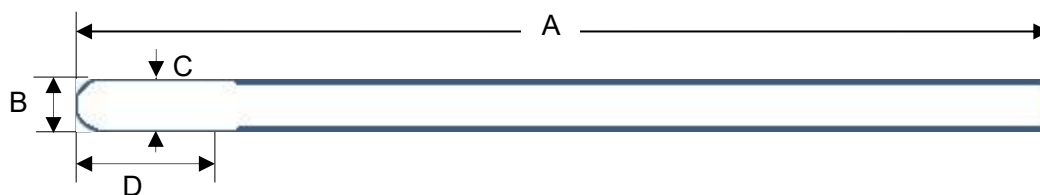
Figure 2

$^1\text{H}$  NMR Data 1 scan 20mM Sucrose in  $\text{D}_2\text{O}$  298°K Bruker 600MHz

U.S. Patent No.5, 573, 567



# Ultra Thin wall NMR Tubes



Parts N.O.	Dimension (mm)				Tolerance ( $\mu\text{m}$ )		Price/a piece (JPY)
	Length(A)	O.D.(B)	Wall Thickness(C)	Length of thin wall(D)	Wall thickness control	Straightness	
PST-001	180	4.965 +0.005 -0.010	0.21	50	10	10	3,000
PST-002	180	4.965 +0.005 -0.010	0.21	50	20	25	2,000
ST8-001	190	7.98 $\pm 0.01$	0.25	50	10	10	4,500
ST8-002	190	7.98 $\pm 0.01$	0.25	50	20	20	3,500
ST10-001	190	9.98 $\pm 0.01$	0.25	50	10	10	4,500
ST10-002	190	9.98 $\pm 0.01$	0.25	50	20	20	3,500

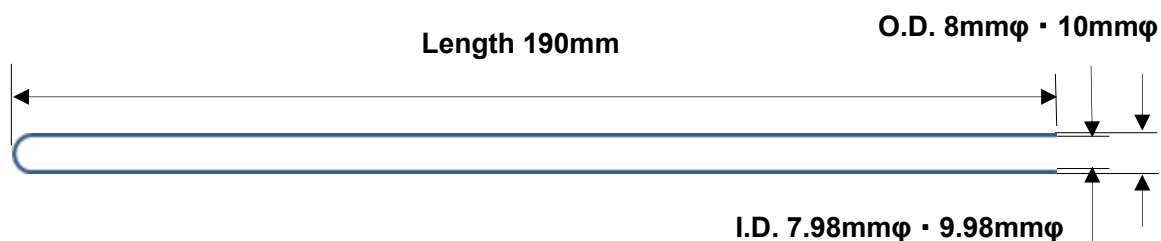
## Volume comparison (40mm Height)

I.D( $\phi$ )	Thin wall	Ultra Thin Wall
5mm	550 $\mu\text{L}$	637 $\mu\text{L}$
8mm	1,507 $\mu\text{L}$	1,703 $\mu\text{L}$
10mm	2,465 $\mu\text{L}$	1,712 $\mu\text{L}$





# Precision Large Volume NMR Tubes



Parts N.O.	Dimension (mm)			Tolerance (μm)		Price/a piece (JPY)
	Length	O.D.	I.D.	Straightness	Wall thickness control	
S-8-001	190	7.98 ±0.01	7.03 +0.01 -0	10	15	3,000
S-8-002	190	7.98 ±0.01	7.03 +0.01 -0	10	20	2,500
S-10-001	190	9.98 ±0.01	9.03 +0.01 -0	10	15	3,000
S-10-002	190	9.98 ±0.01	9.03 +0.01 -0	10	20	2,500
S-10-003	190	9.98 ±0.01	9.03 +0.01 -0	20	30	2,000
S-10-004	190	9.98 ±0.01	9.03 +0.01 -0	20	40	1,800

If you need more volume, see “Ultra Thin wall (page 23)”

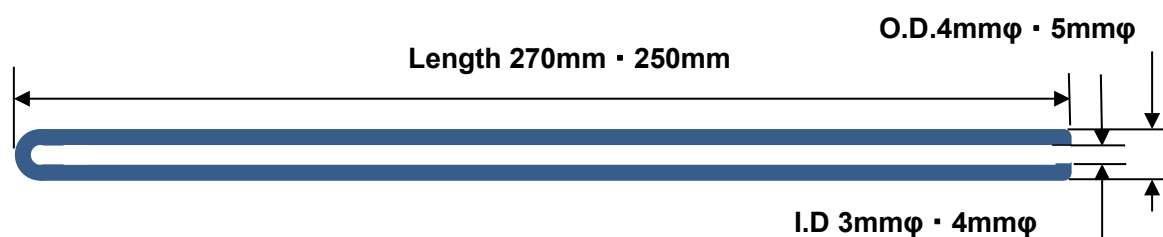
Volume comparison (40mm Height)

I.D(φ)	Thin wall	Ultra Thin Wall
5mm	550μL	637μL
8mm	1,507μL	1,703μL
10mm	2,465μL	1,712μL

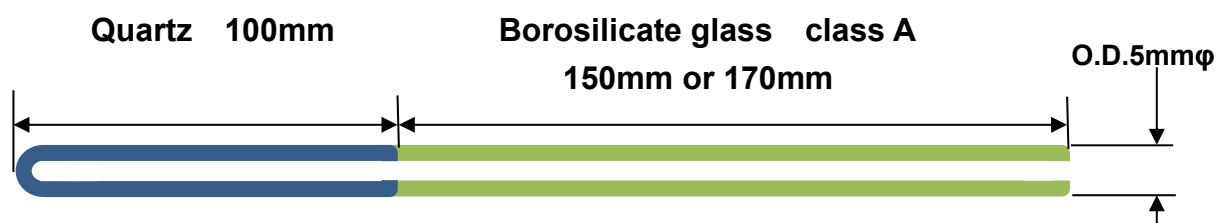


# ESR (EPR) Quartz Tubes

★Made of Fused Silica which is ultra-low background!!



Part N.O.	O.D.	I.D.	Length	Material	Price/ a peace(JPY)
EPS-004J	4mm	3mm	270mm	Fused Silica	2,000
EPS-004B	4mm	3mm	250mm	Fused Silica	2,000
EPS-005J	5mm	4mm	270mm	Fused Silica	3,000
EPS-005B	5mm	4mm	250mm	Fused Silica	3,000



Part N.O.	O.D.	I.D.(borosilicate glass)	I.D.(Quartz)	Length	Material	Price/ a peace(JPY)
EPW-005J	5mm	3mm	4mm	270mm	Quartz 100mm(Bottom) Borosilicate glass170mm (Upper)	3,000
EPW-005B	5mm	3mm	4mm	250mm	Quartz 100mm(Bottom) Borosilicate glass150mm (Upper)	3,000

The material produced by Shinetsu Quartz Co. LTD

Fused Silica	Metallic impurity (ppm)								OH radical
	Na	K	Li	Mg	Cu	Fe	Ca	Al	
HERALUX-E-LA	<0.05	<0.1	0.05	<0.05	<0.05	0.1	0.5	15	20



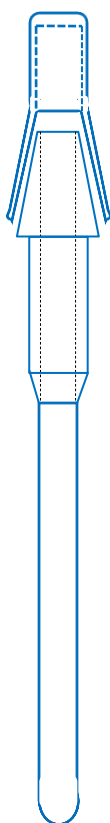
# TRUE GAS TIGHT TUBE FOR NMR · ESR

It is effective for samples that are sensitive to vacuum, nitrogen substitution, evaporation, water absorption, etc. Apply vacuum grease to the edge of the lid before use. Be careful not to let grease get into the sample tube. It can withstand long-term sealing.

## Benefit

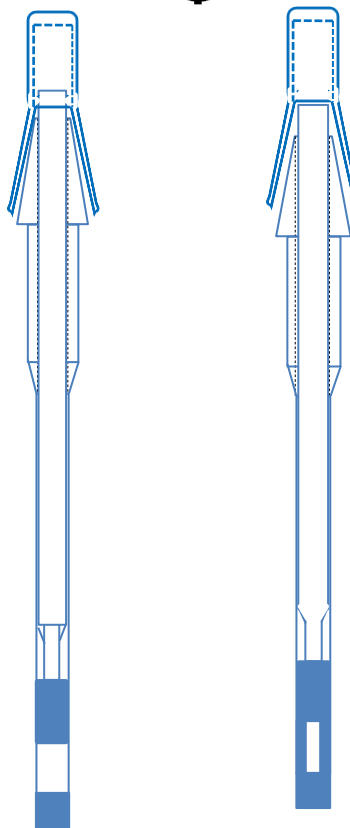
1. To keep long term vacuum.
2. No need HEAT SEALING.
3. Standard Taper

§



1. To keep long term vacuum.
2. No need HEAT SEALING.
3. Standard Taper

§



	P. N		JPY
5mm NMR Gas tight tube	PS-003GT	1Set	7,000
5mm symmetrical MICRO NMR Gas tight Tube for D <sub>2</sub> O	BMS-005BGT	1Set	14,000
	BMS-005JGT	1Set	14,000
	BMS-005VGT	1Set	14,000
5mm symmetrical MICRO NMR Gas tight Tube for CDCl <sub>3</sub>	CMS-005BGT	1Set	14,000
	CMS-005JGT	1Set	14,000
	CMS-005VGT	1Set	14,000
5mm symmetrical MICRO NMR Gas tight Tube for DMSO((CD <sub>3</sub> ) <sub>2</sub> SO),Benzene (C <sub>6</sub> D <sub>6</sub> ), Pyridine (C <sub>5</sub> D <sub>5</sub> N)	DMS-005BGT	1Set	15,000
	DMS-005JGT	1Set	15,000
	DMS-005VGT	1Set	15,000
5mm symmetrical MICRO NMR Gas tight Tube for Methanol(CD <sub>3</sub> OD),Acetonitrile (CD <sub>3</sub> CN)用	MMS-005BGT	1Set	15,000
	MMS-005JGT	1Set	15,000
	MMS-005VGT	1Set	15,000
SLOT TUBE Gastight	SBMSGT	1Set	30,000
5mm NMR Gas tight tube(Quotz)	SS-002GT	1Set	9,000
5mm ESR Gastight tube (Quotz) length 250mm	EPS-005BGT	1Set	9,000
5mm ESR Gastight tube (Quotz) length 270mm	EPS-005JGT	1Set	9,000
4mm ESR Gastight tube (Quotz) length 250mm	EPS-004BGT	1Set	8,000
4mm ESR Gastight tube (Quotz) length 270mm	EPS-004JGT	1Set	8,000



# Accessories

## NMR Tube Caps



Parts N.O.	Description	Color	Price/100pieces
CP-005-Y	5mm	Yellow	1,500JPY
CP-005-G	5mm	Green	1,500JPY
CP-005-R	5mm	Red	1,500JPY
CP-005-P	5mm	Pink	1,500JPY

## PTFE NMR Tube Caps

Parts N.O.	Description	Price/ a peace
CT-003	3mm	800JPY
CT-004	4mm	250JPY
CT-005	5mm	600JPY
CT-008	8mm	350JPY
CT-010	10mm	900JPY



## FKM NMR Tube Caps

Parts N.O.	Description	Price/ a peace
CF-004	4.1mm	350JPY
CF-005	5mm	350JPY
CF-010	10mm	450JPY



## FKM NMR Tube Caps

Parts N.O.	Description	Price/ a peace
CS-005	5mm	600JPY



# 5mm NMR SAMPLE TUBE for SampleJet

## SJ-5

### BENEFIT

- ☆High precision O.D. good for spinning, put on caps, insert spinner.
- ☆Material:DURAN ASTM ClassA good for variable temperature.
- ☆To melt end face for strong damage.



### SPECIFICATION

Part Number	(mm)			straightness ( $\mu$ m)
	Length	O. D.	I. D	
SJ-5	103.5(4inch)	4.965 +0.005 -0.010	4.220 $\pm$ 0.10	30

### Price

10packs (1,000PCS) (Minimum order unit)

10packsX1pack (100 pcs of tubes) (13,000JPY)=130,000JPY

## CAPS for SJ-5

Just fit for SJ5 Price 1pack in 100 PCS of caps 5,000JPY



### Part Number

SJC-5P(pink), SJC-5Y(yellow), SJC-5G(green), SJC-5W(white), SJC-5B(blue), SJC-5R(red)

