



Extraordinary results begin with superior labware



Ultracentrifugation Labware
Floor and Tabletop

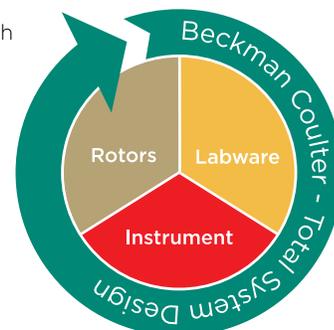
BRILLIANCE
at every turn.



INVESTING IN THE SAFETY OF YOUR LAB

With total-system design in mind from the start, Beckman Coulter designs our ultracentrifuge Labware to complement our Optima Series ultracentrifuges, optimizing performance, ease of use, and safety.

- Beckman designs the rotors in a way that the tube/bottle is supported correctly to minimize high stress areas that may cause premature failure
- Compare theoretical models vs actual results
 - During the rotor design phase, sophisticated simulation software allows engineers to remove problem areas
 - Then physical rotors, loaded with consumables, go through MCA (Maximum Credible Accident) tests to verify that the simulation results were correct and everything is contained
 - The results are part of the certification process for the CSA and CE marks.



Therefore, using Beckman Coulter consumables with Beckman Coulter rotors is necessary.

Consumables to match your workflow

SEALING

OptiSeal Tubes

Employ patented technology to provide a fast, reliable seal every time. Seal with a finger-touch and without tools, heat, or closure verification. Wide necks offer effortless filling and fraction collection



Quick-Seal tubes

Provide secondary BioSafe* containment. Seal with a simple, hand-held sealing tool without plugs or orings. Available in both round and konical bottom.



OPEN TOP

Open Top Tubes

Allow centrifuging in fixed-angle and swinging-bucket rotors. Available in multiple materials as well as thinwall and thickwall options.



BOTTLES

Bottle Assemblies

With both two and three-piece caps, bottles are reusable and ensure containment while centrifuging large volume samples



SPECIALTY

Stainless steel tubes

Can be used with toluene and other organic solvents, crucial for many nanoparticle applications



Cellulose Propionate

Are transparent and designed for one-time use. These tubes have good tolerance to all gradient media including alkalines.



1.5mL Snap-Caps



*Biosafe is a term intended to describe enhanced biocontainment features of our products.

ULTRA ROTOR AND TUBE TYPE GUIDE

Type			Sealing				Open Top					Bottles		Specialty				
			OptiSeal		Quick-Seal		Thinwall			Thickwall		PP	PC	SS	Cellulose Propionate	1.5mL PP Snap-Caps		
			PP	UC	PP	konal	UC	PP	konal	PP	PC						PET	
Floor Prep Ultracentrifuge	Fixed Angle	Type 100 Ti			•													
		Type 90 Ti	•		•		•	•		•	•							
		Type 70.1 Ti	•		•		•	•		•	•							
		Type 70 Ti	•		•		•	•		•	•			•	•			
		Type 50.4 Ti	•		•		•	•		•	•							
		Type 50.2 Ti	•		•		•	•		•	•			•	•			
		Type 45 Ti			•		•	•		•	•			•				
		Type 42.2 Ti								•	•						•	
		Type 25				•					•							
	Type 19											•						
	Swinging Bucket	SW 60 Ti			•	•	•	•	•	•	•							
		SW 55 Ti	•		•	•	•	•	•	•	•							
		SW 41 Ti			•	•	•	•	•	•	•							
		SW 40 Ti			•	•	•	•	•	•	•							
		SW 32.1 Ti			•	•	•	•	•	•	•							
		SW 32 Ti	•		•	•	•	•	•	•	•							
		SW 28.1 Ti			•	•	•	•	•	•	•							
	SW 28 Ti	•		•	•	•	•	•	•	•								
	NVT	NVT 100			•													
		NVT 90	•		•													
		NVT 65.2	•		•													
		NVT 65	•		•													
	Vertical	VTi 90	•		•													
		VTi 65.2	•		•													
		VTi 65.1	•		•													
		VTi 50	•		•													
	Table-Top Ultracentrifuge	Fixed Angle	TLA-120.2			•					•	•						
			TLA-120.1								•	•						
TLA-110			•		•					•	•						•	
TLA-100.3					•					•	•						•	
TLA-100										•	•			•			•	
TLA-55										•	•						•	
MLA-150					•					•	•							
MLA-130					•					•	•							
MLA-80					•					•	•							
MLA-55		•	•	•		•	•		•	•		•						
MLA-50		•		•		•	•		•	•								
Swing Bucket		TLS-55			•		•	•		•	•	•				•		
		MLS-50	•		•	•	•	•	•	•	•							
NVT	TLN-120			•														
	TLN-100	•		•														
	MLN-80	•		•														

Note: Accessories, adapters, spacers, and/or caps may be required for some of the rotor and tube combinations. For a complete listing of rotor and tube offerings, please consult our online Ultracentrifuge catalog at www.Beckman.com

Abbreviations: PP - Polypropylene, UC - Ultra-Clear, PC - Polycarbonate, SS - Stainless Steel, PET - Polyethylene

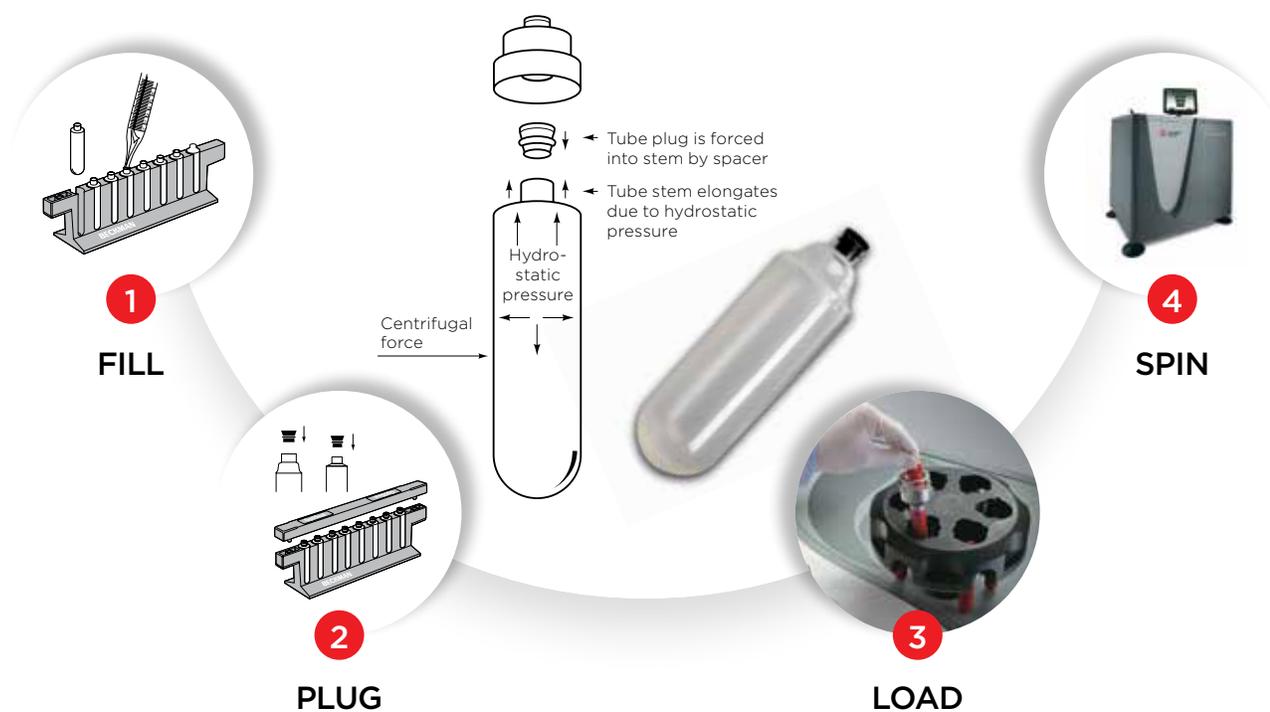
Properties	Material					
	Ultra-Clear	Polycarbonate	Polypropylene	Polyethylene	Cellulose Propionate	Stainless Steel
Visibility	Clear	Clear	Translucent	Translucent	Clear	Opaque
Sterilization Methods	Chemical	Autoclavable	Autoclavable	Chemical	Chemical	Autoclavable
Chemical Resistance	Poor	Poor	Great	Good	Poor	Great
Puncturable	•		• (thinwall)	• (thinwall)		
Reusable		•	• (thickwall)	•		•

SEALING TUBES

Beckman Coulter offers 2 different types of sealing tubes that are compatible with Ultracentrifuge rotors
Sealable tubes allow for the 1st level of biocontainment for tube transfers to rotors

OptiSeal Tubes

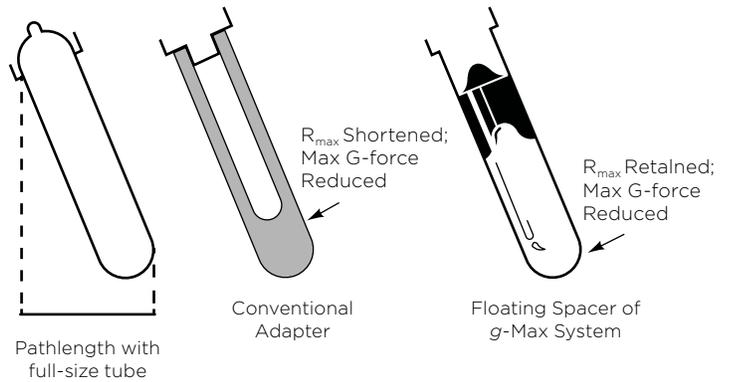
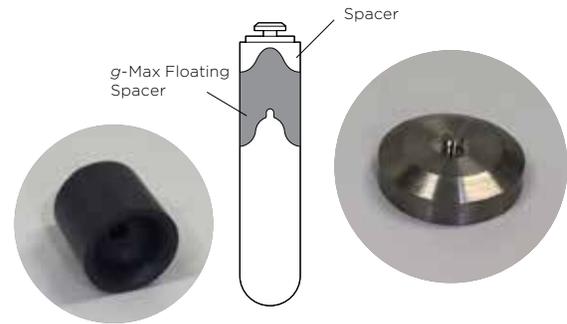
- Material Offering: Thinwall PP
- Volume Range: 3.3mL – 36.2mL
- Compatible with 20 Ultra Rotors
- Can be sliced or punctured
- Wider tube neck allows for easier buffer and sample exchange
- Uses a push-in Noryl plug with o-ring to seal tubes
- Ability to be unplugged for sample recovery
- Tube rack provides a convenient means of holding tubes during loading and unloading, which also keeps fingers clear during syringe extraction
- Requires spacer above tube during centrifugation



Most Popular OptiSeal Tubes				
Volume (mL)	PN	Material	Size (mm)	Rotors Supported
32.4	361625	Polypropylene	25 x 77	Type 70 Ti, Type 50.2 Ti, SW 32 Ti, SW 28, MLA-50
8.9	361623	Polypropylene	16 x 60	Type 90 Ti, Type 70.1 Ti, MLA-55
4.9	362185	Polypropylene	13 x 51	VTi 90, VTi 65.2, NVT 90, NVT 65.2
4.7	362621	Polypropylene	13 x 48	Type 50.4 Ti, TLA-110

Quick-Seal Tubes

- Material Offerings: Thinwall PP and Ultra-Clear
- Volume Range: 1mL – 100mL
- Styles: Round Bottom and konical™ Bottom
- Compatible with 36 Ultra Rotors
- Can be sliced or punctured
- Handheld heat sealer and accessories to seal the tubes
- Requires spacers above tube during centrifugation
- g-Max System - allow flexibility of volumes within the same ultracentrifuge rotors while maximizing efficiency



Beckman Coulter Ultra-Clear Material

Same optical properties as Polycarbonate, but allows for simplified sample recovery by syringe extraction

Advantages of g-Max spacers

- No reduction in Rotor g-force
- Reduced run time (shorter path length)



Handheld sealing tool



Tube removal tool

Most Popular Quick-Seal Tubes				
Volume (mL)	PN	Material	Size (mm)	Rotors Supported
100.0	345776	Polypropylene	38 x 102	Type 45 Ti
100.0	345778	Ultra-Clear	38 x 102	Type 45 Ti
39.0	342414	Polypropylene	25 x 89	Type 70 Ti, Type 50.2 Ti, VTi 50
39.0	344326	Ultra-Clear	25 x 89	Type 70 Ti, Type 50.2 Ti, VTi 50
13.5	342413	Polypropylene	16 x 76	Type 90 Ti, Type 70.1 Ti, NVT 65, VTi 65.1, MLA-55

OPEN TOP TUBES

Thinwalled Open-Top Tubes

- Material Offerings: Ultra-Clear, Polypropylene, and Polyethylene
- Volume Range: 175uL - 94mL
- Styles: round bottom and konical bottom
- Thinwall tubes designed for single-use
- Offer large opening for easy sample loading and recovery
- Cap sealing assemblies may be required for fixed angle rotors



konical bottom tubes

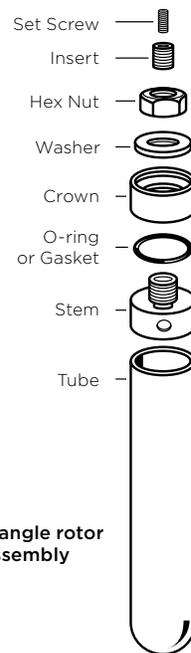
concentrate small samples, like RNA, which are pelleted into the bottom of the tube for the most concentrated pellet and easier recovery



Thinwall vs Thickwall

Thickwalled Open-Top Tubes

- Material Offerings: Polycarbonate, Polypropylene, and cellulose Propionate
- Volume Range: 230 uL - 94 mL
- Thickwall tubes are able to be reused
- Offer large opening for easy sample loading and recovery

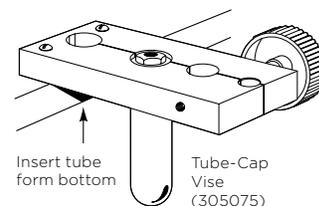


Fixed angle rotor cap assembly



Ultra-Clear Tubes

In applications like viral vectors, customers need to visually see distinct bands and be able to easily syringe extract them through the side of tube



Most Popular Open-Top Thinwall Tubes				
Volume (mL)	PN	Material	Size (mm)	Rotors Supported
38.5	344058	Ultra-Clear	25 x 89	Type 70 Ti, Type 50.2 Ti, SW 32 Ti, SW 28
38.5	326823	Polypropylene	25 x 89	Type 70 Ti, Type 50.2 Ti, SW 32 Ti, SW 28
14.0	344060	Ultra-Clear	14 x 95	SW 40 Ti
14.0	331374	Polypropylene	14 x 95	SW 40 Ti
13.2	344059	Ultra-Clear	14 x 89	SW 41 Ti
13.2	331372	Polypropylene	15 x 89	SW 41 Ti
5.0	344057	Ultra-Clear	13 x 51	SW 55 Ti, MLS-50

BOTTLES AND SPECIALTY TUBES

Bottles

- Material Offerings: Polypropylene and Polycarbonate
- Volume Range: 8.5mL - 250mL
- 3 piece liquid-tight cap assemblies provides leak-proof closure
- Reusable and supports larger volumes



Specialty Tubes

Stainless Steel

- Volume: 38.5mL & 94mL
- Great chemical resistance
- Can be centrifuged at any fill level
- Excellent heat resistance

1.5mL Snap-Caps

- Low-volume (1.5mL) easy seal tubes
- Inert material (PP)
- Conical bottom allows for tight pellet

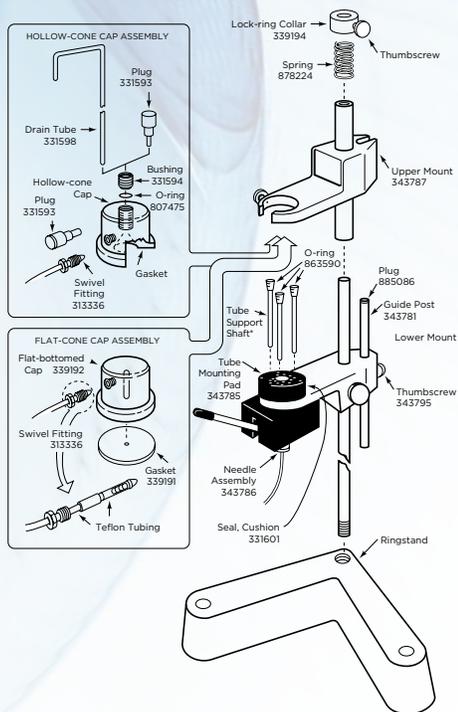
Cellulose Propionate

- Small volume: 230uL
- Clear
- Tolerant to most gradient media, including alkalines



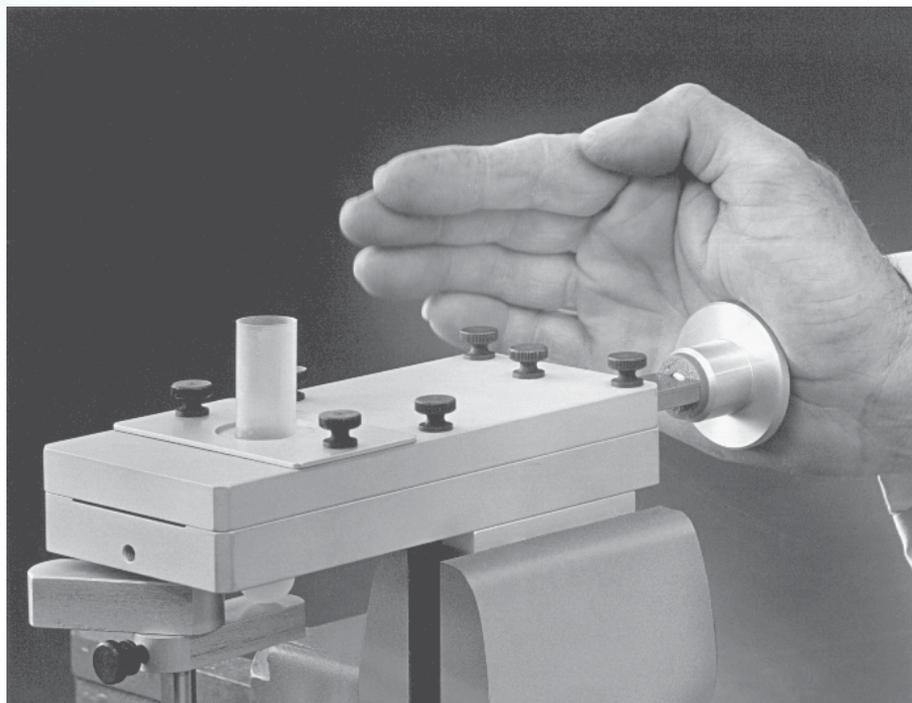
Most Popular Bottles				
Volume (mL)	PN	Material	Size (mm)	Rotors Supported
250.0	344205	Polypropylene	60 x 120	Type 19
70.0	355622	Polycarbonate	38 x 102	Type 45 Ti
26.3	355618	Polycarbonate	25 x 89	Type 70 Ti, Type 50.2 Ti,
10.4	355603	Polycarbonate	16 x 76	Type 90 Ti, Type 70.1 Ti, MLA-55

SAMPLE RECOVERY TOOLS



Fraction Recovery System

Allows for fraction recovery of multiple tube types. Different adapters allow for bottom or top fraction recovery, depending on the tube type.



Tube Slicer

Used to slice thinwall tubes for sample recovery. The blade of slicer acts as barrier to mixing of separated fractions.

Beckman Coulter's legacy for centrifuge quality and innovation encompasses more than 60+ years. We apply our technology leadership not only to our instruments and rotors, but also the design and fabrication of centrifuge bottles, tubes, and adapters. Our pioneering ultracentrifuge products include more than 130 different types of labware, allowing us to provide the best solution for your sample as well as increased safety and ease of use

For more information regarding consumables; visit
<http://info.beckmancoulter.com/CentrifugeConsumables>



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