

Thermo Scientific High Performance Closure

for Thermo Scientific Sorvall Superspeed Centrifuge Bottles, 1000 ml

Items Supplied

Set of 2 High Performance Closures (75003511); user instructions (50143798).



Intended Use

The Thermo Scientific High Performance Closure is designed to be used together with Thermo Scientific™ Sorvall™ Polypropylene (PPCO) 1L Superspeed Centrifuge Bottles (010-1455 without cap; 010-1456 with aluminum cap). The High Performance Closure can also be used with Thermo Scientific Sorvall Polycarbonate (PC) 1L Superspeed Centrifuge Bottles (010-1458 without cap; 010-1459 with aluminum cap).

The High Performance Closure is a higher strength and enhanced lifetime replacement for the plastic cap. The High Performance Closure provides the benefits of expanded operational temperature range, improved chemical resistance, and longer bottle life.

Description

The High Performance Closure is made of anodized aluminum alloy. As such it should be not exposed to chemicals that are not compatible with aluminum, including but not limited to NaOH and sodium hypochlorite.

⚠ CAUTION Rotor Crash in the centrifuge can occur because of closure break. Corrosion of the High Performance Closure will occur if the closure is exposed to aggressive substances as sodium hydroxide (NaOH) or sodium hypochlorite. Inspect the surface of the closure before and after the contact to aggressive substances for any surface damage and signs of corrosion. Do not use High Performance Closures with any signs of corrosion or other damage.

Specifications

| | |
|--|---|
| Maximum RCF-Value at n_{max} | |
| Thermo Scientific™ Fiberlite™ F9-6x1000 LEX Rotor in a Thermo Scientific™ Sorvall LYNX 6000 superspeed centrifuge | 17568 x g |
| Thermo Scientific Fiberlite F10-4x1000 LEX Rotor in a Sorvall LYNX 6000 or 4000 superspeed centrifuge | 20584 x g |
| Thermo Scientific Fiberlite F5-10x1000 LEX Rotor in a Thermo Scientific Sorvall RC BIOS 10 centrifuge | 9333 x g |
| Operating Temperature | 4 °C to 40 °C |
| Maximum Sample Density | 1.2 g/ml |
| Fill Volume Rate | 800-1000 mL |
| Cycle Life | Closure: 1000 cycles. Replace bottles and plugs prior to 100 cycles (PPCO) or to 50 cycles (PC). Replace o-rings more frequently if needed. |
| Autoclavable | Closure: 121 °C for 20 minutes or 134 °C for 3 minutes. Bottles: 121 °C for 15 minutes |

Chemical Compatibility

| Chemical | Material | | | | |
|--------------------------------------|-------------------|---------------|---------------|--------|----------|
| | Anodized Aluminum | Polypropylene | Polycarbonate | Viton™ | Silicone |
| Acetic Acid | B | A | A | B | B |
| Acetone | A | A | D | D | D |
| Ethanol | B | A | B | A | B |
| Formaldehyde (40%) | B | A | A | A | N/A |
| Hydrochloric Acid (20%) | D | B | B | A | D |
| Phenol (Carbolic Acid) | A | B | D | A | D |
| Phosphoric Acid (540%) | C | A | A | A | C |
| Potassium Hydroxide (Caustic Potash) | D | A | D | B | C |
| Potassium Hypochlorite | D | N/A | N/A | N/A | N/A |
| Sodium Hydroxide (20%) | D | A | A | C | A |
| Sodium Hypochlorite (<20%) | D | A | C | A | B |
| Sulfuric Acid (<10%) | D | A | A | A | C |

A – Excellent; B – Good, minor effect, slight corrosion or discoloration; C – Fair, moderate effect, not recommended for continuous use. Softening, loss of strength, swelling may occur; D – Severe Effect, not recommended for any use; N/A – Information not available.

NOTE Chemical resistance data is included only as a guide to product use. Because no organized chemical compatibility data exists for materials under the stress of centrifugation, when in doubt we recommend pretesting sample lots.

For more information on chemical compatibility check the chemical compatibility chart in the Thermo Scientific centrifuge and rotor manuals.

Assembly

Hand-tighten the High Performance Closure onto the bottle, keeping the white plug and o-rings in the assembly.

Sorvall 1L Superspeed Centrifuge Bottles require a sealing cap assembly that includes a closure, plug, and o-ring. Carefully follow all centrifuge and rotor instruction manual guidelines to ensure proper performance. Follow assembly instructions:

1. Pre-assemble the plug and o-ring. Ensure the o-ring is seated under the ledge of the plug.
Visually check that the o-ring is seated evenly around the circumference of the plug.
2. Fill bottle with 800-1000 ml of sample. Place the plug/o-ring assembly onto the top of the bottle. Visually check that the o-ring is seated evenly between the plug and lip of the bottle.
3. Place the closure onto the bottle with plug and o-ring installed and tighten the closure turning clockwise. Screw down the closure onto the bottle until resistance is felt, then hand-tighten about another 30° (1/12 turn) to firmly compress the o-ring.
4. Before placing bottles into the rotor, weigh bottles to ensure bottles are balanced within the acceptable limit for the respective rotor being used for the run.

⚠ **CAUTION** Always securely tighten the sealing cap assembly and check for signs of wear. Failure to do so can result in deformation or collapse of the bottle during centrifugation that could result in loss of sample, damage to the rotor, damage to the centrifuge, and personal injury.

Operation

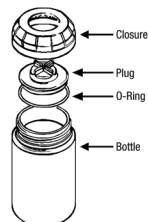
Run the properly filled and assembled bottles in the centrifuge within the temperature, sample density, and g-force limits listed in the Specifications table.

The High Performance Closure and Sorvall Bottles are wearable parts with a finite performance life. Bottles used with compatible samples would be expected to show physical signs of wear with repeated use. Before each use, carefully inspect the bottle, plug, o-ring and High Performance Closure for signs of wear including cracks, crazing, discoloration, yellowing, deformation, surface scratches, abrasions, corrosion or chemical attack. Inspect the High Performance Closure on the outside and inside for signs of corrosion, abrasions and encrustations. Remove from service immediately any bottles, plugs, o-rings or closures that show signs of wear, damage or corrosion.

For best results replace the bottle and plug prior to 100 cycles (PPCO), 50 cycles (PC) or within 6 months of usage, and replace the o-ring more often if needed. The High Performance Closure has a warranty of 1 year; it is recommended to replace it after 5 years or 1000 cycles, whichever ever comes first.

The compatibility between chemicals and plastic centrifuge ware is affected by temperature, chemical concentration, g-force, length of run and other factors. Check the material properties and chemical resistance charts for both your sample and solvent. Consider operating temperature when selecting the bottle material. RCF ratings are available at 4 °C and 40 °C. All plastics undergo some degree of softening or hardening outside of the recommended ranges. Because of the stresses associated with centrifugation, these ratings are a general guide only. We recommend a trial run before using a certain chemical or running outside of the recommended temperature range.

NOTE Your safest policy is to pre-test all bottles under actual conditions, using water rather than actual sample.



Superspeed Centrifuge Safety

⚠ **WARNING** High capacity bottles running at high speeds in Thermo Scientific Superspeed centrifuges present a risk potential that requires users to have training and knowledge of the variables that may contribute to increased risk of failure. Each laboratory and application have unique variables, including chemical nature of sample solutions, instrument and rotor characteristics, cleaning and sterilization procedures, temperature, duration of run or "spin time", etc. Plastic super-speed bottles, like most laboratory products, have a finite life that is significantly affected by such variables. A failure event has the potential to cause irreparable harm to the rotor or centrifuge and may result in personal injury. Establish good safety protocols based upon your usage variables.

Rotor Compartment Load

Bottles may be filled with up to 1,000 ml. At 1,000 ml the liquid level will fall at the first thread of the bottle neck. Do not exceed a sample density of 1.2 g/ml.

NOTE Bottles must be filled with at least 800 ml.

Strict adherence to the maximum allowable compartment mass or reduced speed is required to prevent rotor failure. Check the centrifuge and rotor manuals for maximum allowable compartment mass or for the formula for reduced speed.

⚠ **WARNING** If the Maximum Compartment Mass is exceeded, the speed must be reduced. Failure to do so can result in personal injury and/or centrifuge damage.

Cleaning

Soak centrifuge bottles in warm water with a mild, non-alkaline detergent to loosen debris. Hand wash and rinse thoroughly, with final rinse in distilled (or deionized) water. Do not use abrasive cleaners or brushes. Allow to air dry.

High Performance Closures are autoclavable at 121 °C for 20 minutes or at 134 °C for 3 minutes.

NOTE Do not autoclave bottles with closures engaged to prevent collapse of bottles when cooling.

NOTE Polycarbonate bottles are weakened and their useful life is shortened if autoclaved.