Thermo Scientific Nalgene 2L Bio Bottle

General Information

Thermo Scientific Nalgene 2L Bio Bottles are made from polypropylene copolymer. When used as directed in specified Thermo Scientific Sorvall centrifuges and rotors, the bottles are rated to maximum speed of 7,333 x g.

- Graduated
- Maximum speed rating 7,333 x g
- Excellent chemical resistance
- Performance from 4°C to 22°C
- USP Class VI, non-cytotoxic
- Brim capacity 2,380 mL

Nalgene 2L Bio Bottle

Polypropylene copolymer bottle with polypropylene plug with silicone gasket and polypropylene screw closure.

Cat. Nos.: 3120-2002 and 3120-2006

2L Bio Bottles are covered under warranty to 50 cycles; 20 minute autoclave at 121°C/15 psig (1 bar), then 20 minute spin up to 7,333 x g at 22°C. Remove centrifuge bottles and closure assemblies from service upon reaching this service life equivalency. Certified non-hemolytic.

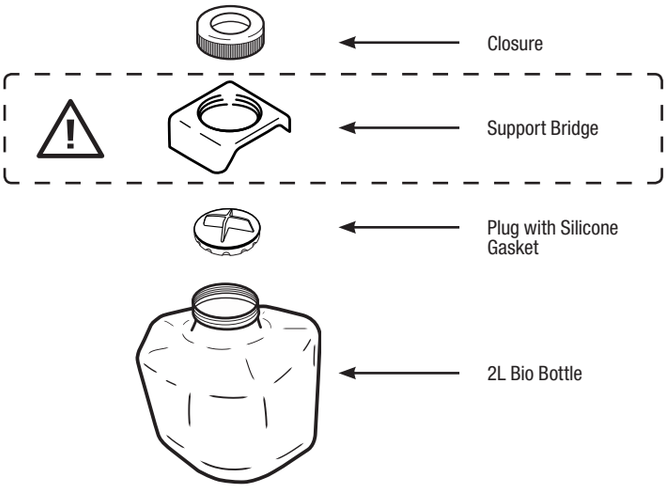
Nalgene 2L Bio Bottle, Sterile, Single Use

Polypropylene copolymer bottle with polypropylene plug with silicone gasket and polypropylene screw closure.

Cat. No.: 3120-2024

Gamma irradiated 2L Bio Bottles are covered under warranty for single use to 7,333 x g, for one 20 minute cycle at 22°C. Certified non-hemolytic.

Follow assembly instructions below:



Instructions for Use:

Each 2L Bio Bottle requires a plug, closure and a support bridge for proper performance in the H-12000 rotor.

The H-12000 rotor comes with six support bridges. To order replacement support bridges contact the centrifuge rotor manufacturer directly at 1.866.984.3766 (North America) or visit www.thermoscientific.com.

Carefully follow the RC12BP Plus centrifuge and H-12000 rotor instruction manuals' guidelines to ensure proper performance.

CAUTION!

Always use a support bridge, plug and a securely tightened closure. 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, personal injury and/or damage to the centrifuge.

Closure should be hand tightened to approximately 40 in·lbs (4.5 N•M) torque. Place assembled bottle in the bucket. The counter balance margin for the H-12000 rotor is 50 grams. Before placing bottles into rotor, weigh bottles to determine counter balance scheme for the run.

Strict adherence to the maximum allowable compartment mass or reduced speed is required to prevent rotor failure. The maximum allowable compartment mass for the RC12BP Plus and H-12000 rotor is 4726 grams. To prevent rotor failure the total mass of the contents of any compartment; including specimen, bottle, closure, support bridge and bucket, must be less than the maximum allowable mass unless the speed is reduced proportionately.

H-12000 Rotor Information

Rotor	Swinging Bucket H-12000
Maximum Speed (rpm)	4700
Maximum RCF* (g-force)[1]	7333
Maximum Compartment mass (grams)[2]	4726[3]
Balance Margin (grams)	50
Critical Speed (rpm)	400
Biohazard Containment Available	No

RCF - Relative Centrifugal Force

1. Values reflect the centrifuge's calculation rounding and are based on the rotor's maximum radius and do not consider any tube, bottle or adapter geometry.
2. Maximum allowable at maximum speed (see Reducing Speed for Rotor Compartment Loads in Excess of Design Mass).
3. Value includes the mass of the bucket, support bridge, closure (cap and gasket) and sample weight; value for contents only (not including the bucket) is approximately 2160 grams.

   Each bottle, each run the compartment mass must be checked and the speed adjusted accordingly.

WARNING!

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

Reducing Speed for Rotor Compartment Loads in Excess of Design Mass

When the actual compartment mass is more than that specified for the rotor, the reduced speed can be determined using the following formula:

$$\text{Reduced Speed (rpm)} = \text{Maximum Rotor Speed (rpm)} \sqrt{\frac{\text{Maximum Compartment Mass}}{\text{Actual Compartment Mass}}}$$

The compatibility between chemicals and plastic centrifuge ware is affected by temperature, chemical concentration, g-force, length of run and other factors. Check the resin properties and chemical resistance charts for both your sample and solvent. Also, consider operating temperature when selecting the bottle material. Recommended RCF rating guidelines are available for 4°C and 22°C. All plastics undergo some degree of softening or hardening outside of these temperature ranges.

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Speed Rating Chart

Cat. No.	Resin	Max RCF @		Closure
		4°C	22°C	
3120-2002	PPCO	7,333 x g	7,333 x g	713120-0063
3120-2006	PPCO	7,333 x g	7,333 x g	713120-0063
3120-2024	PPCO	7,333 x g	7,333 x g	713120-0063

Because of the stresses associated with centrifugation, these ratings are a general guide only. We recommend a trial run before using your application specific chemicals, autoclaving and temperature parameters.

If any doubt exists about a particular application, refer to the detailed chemical resistance charts on thermoscientific.com or contact Technical Service at 1.800.625.4327 or e-mail technicalsupport@thermofisher.com.

Note:

- We recommend pre-testing all bottles under actual conditions, using water first rather than actual samples.

  Before each use, inspect bottle, closures, plugs and gaskets for signs of wear including cracks, crazing, discoloration, yellowing, brittleness, deformation, surface abrasions, or chemical attack. Inspect gasket for signs of wear, cracks, tears, discoloration or brittleness.

CAUTION!

- Immediately discard any bottle, closure, plug or gasket showing any signs of wear.
- Each bucket containing sample and bottle assembly must be balanced before each use. See the H-12000 rotor manual for instructions on balancing opposing loads.
- The 2L Bio Bottle is graduated in 500 mL increments, where the Max Fill Line indicates the 2,000 mL volume mark. Consult the centrifuge and rotor operating manuals for operating above the Maximum Compartment (Design) Mass.
- Bottles should be run with at least 1,550 mL for optimal performance.

WARNING!

In any centrifugation process and particularly in large volume fixed-angle applications it is possible for a seal to leak or for an aging bottle to fail during use. Always take precautions when radioactive or pathogenic materials are centrifuged. Follow all procedures and recommendations cited in your centrifuge and rotor instruction manuals.

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.

Autoclaving:

Bottles, closures, plugs and gaskets can be autoclaved. Wash and dry thoroughly all bottles, closures, plugs and gaskets prior to autoclaving. The recommended parameter for autoclaving is 15 minute cycles at 121°C/15 psig (1.02 bar). Inspect these materials after each autoclave cycle for signs of crazing (minute cracks). Immediately remove from service if crazing is readily visible to the unaided eye. Autoclave closure, plug and gasket assembled on the bottle without engaging the threads.

WARNING!

To prevent collapse of bottles, do not autoclave bottles with closure threads engaged.

Resin Physical Properties Chart

Resin Code	PPCO	Silicone
Max Use Temp. °C[1]	125	204
Brittleness Temp. °C[2]	-40	-68
Transparency	Contact-clear	Opaque
Autoclavable[3]	Yes	Yes
Non-cytotoxicity[4]	Yes	Yes
Suitability for Food and Beverage Use	Yes	Yes
Reg. 21 CFR[5]	177.1520	177.2600
Dry Heat Sterilization[6]	No	Yes

Key:

PPCO Polypropylene Copolymer

1. Max. Use Temp. ratings are based on 5 minute tests using 600 watts of power on exposed, empty labware.

CAUTION! Do not exceed Max. Use Temp. Do not expose to chemicals which attack the plastic or are rapidly absorbed when heated.

2. The brittleness temperature is the temperature at which an item made from the resin may break or crack if dropped.
3. Sterilization/ Autoclaving ratings based on cycle at 121°C and 15 psig for 20 minutes. Clean and rinse items with distilled water before autoclaving. Always completely disengage threads before autoclaving.) Certain chemicals which have no appreciable effect on resins at room temperature may cause deterioration at autoclaving temperatures unless removed with distilled water beforehand. Dry Heat ratings are based on exposure at 160°C for 120 minutes.
4. "Yes" indicates the resin has been determined to be non-cytotoxic based on USP and ASTM biocompatibility testing standards utilizing an MEM elution technique on a WI-38 normal human diploid lung fibroblast cell line.
5. Resins meet requirements of CFR21 section of Food Additives Amendment of the Federal Food and Drug Act. End users are responsible for validation of compliance in conjunction with their particular application.

Resin Chemical Resistance Chart

Resin Code	PPCO	Silicone
Acids, dilute/weak	S	M
Acids, strong/concentrated	S	U
Alcohols	S	S
Aldehydes	M	U
Bases	S	M
Ethers	M	U
Hydrocarbons/aliphatic	M	M
Hydrocarbons/aromatic	M	U
Hydrocarbons/hologenated	M	U
Ketones	M	U
Oxidizing agents, strong	U	M

Key:

S = Satisfactory.

M = Marginal, may or may not be satisfactory for centrifugation depending on length of exposure, speed and temperature. Test under operating conditions.

U = Unsatisfactory; not recommended for use.

Product Certificates of Compliance are available online at www.thermoscientific.com/certificates - click on the Certificate of Compliance icon. Enter the product part number and lot number, plus you'll need a fax number to receive your Certificate of Compliance within 24 hours. If you have any questions, call Customer Service at 1.585.899.7851 or email your request to certrequest@thermofisher.com.

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