

USE AND CARE OF CENTRIFUGE TUBES AND BOTTLES

Refer to the applicable rotor manual for specific information about the use of your rotor and labware.

TUBE AND BOTTLE DOs AND DON'Ts

DO

- Do inspect tubes for cracks or any major deformities before use.
- Do observe careful filling and sealing procedures to prevent tube collapse. Centrifugal force may cause improperly filled or sealed tubes to collapse.
- Do pretest plastic tubes and bottles for high- or low-temperature runs (above 25°C or below 2°C) under anticipated run conditions, using buffer or gradient of similar density rather than a valuable sample. Be sure that plastic labware is thawed to at least 2°C prior to centrifugation.
- Do observe run speed limitations contained in applicable rotor manuals.
- Do discard Quick-Seal®, OptiSeal™, and thinwall open-top tubes after a single use.
- Do hand-wash tubes and bottles, using a mild detergent solution such as Beckman Solution 555™ diluted 10 to 1 with water. Rinse with distilled water, and air-dry. (Refer to the sterilization and disinfection chart below.)
- Do make sure all tubes and bottles are completely dry before storing them. Store them in their containers in a cool, dry place away from ozone, chemical fumes, and ultraviolet light.

DON'T

- Don't use a tube or bottle that shows signs of cracks or major deformity.
- Don't use a tube or bottle that has become discolored or brittle.
- Don't exceed run speed limitations contained in applicable rotor manuals.
- Don't re-use thinwall, Quick-Seal, or OptiSeal tubes.
- Don't wash tubes or bottles in a dishwasher.
- Don't soak tubes or bottles in hot water or detergent solution for longer than 10 minutes.
- Don't use strongly alkaline detergent solutions for washing tubes or bottles.
- Don't use a hemostat or any metal tool to pry a jammed or collapsed tube or bottle out of the rotor. The rotor can be scratched and damaged. *Remove the tube or bottle contents* and place the rotor upside-down in an autoclave. Autoclave at 121°C for about 30 minutes. At the end of the autoclave cycle the tube or bottle material should be softened enough for easy removal. Contact your Beckman Coulter Service representative if this method is unsuccessful.

CHEMICAL RESISTANCES OF TUBE AND BOTTLE MATERIALS

This information has been consolidated from a number of sources and is provided only as a guide to the selection of tube and bottle materials. Soak tests at 1 g (at 20°C) established the data for most of the materials; reactions may vary under the stress of centrifugation, or with extended contact or temperature variations. To prevent failure and loss of valuable sample, ALWAYS TEST SOLUTIONS UNDER OPERATING CONDITIONS BEFORE USE. Refer to *Chemical Resistances* (publication IN-175) for information about specific solutions.

Tube/Bottle Material	Optical Property	Acids (dilute or weak)	Acids (strong)	Alcohols (aliphatic)	Aldehydes	Bases	Esters	Hydrocarbons (aliphatic)	Hydrocarbons (aromatic and halogenated)	Ketones	Oxidizing Agents (strong)	Salts
Ultra-Clear	transparent	S	U	U	S	U	U	U	U	U	U	S
polycarbonate	transparent	M	U	U	M	U	U	U	U	U	M	M
polypropylene	translucent/transparent	S	S	S	M	S	M	S	M	M	M	S
polyethylene	transparent/translucent	S	S	S	M	S	M	U	M	M	M	S
cellulose propionate	transparent	S	U	U	U	U	M	S	S	U	M	S
stainless steel	opaque	S	U	S	S	M	S	S	S	M	S	M

S = satisfactory resistance M = marginal resistance U = unsatisfactory resistance



WARNING

Do not use flammable substances in or near operating centrifuges.

STERILIZATION AND DISINFECTION

This information is provided as a guide to the use of sterilization and disinfection techniques for tube and bottle materials. Cold sterilization results shown are for short-duration (10-minute) soak periods; reactions may differ with extended contact. Refer to *Chemical Resistances* for information about specific solutions.



NOTE

Although Beckman Coulter has tested these materials for compatibility with labware materials, no guarantee of sterility or disinfection is expressed or implied. When sterilization or disinfection is a concern, consult your laboratory safety officer regarding proper methods to use.

Tube/Bottle Material	Autoclave ¹ (121°C)	UV Irradiation	Ethylene Oxide	Formaldehyde	Ethanol (70%) ²	Sodium Hypochlorite (10%)	Hydrogen Peroxide (10%)	Glutaraldehyde (2%)	Phenolic Derivatives
Ultra-Clear	no	no	yes	yes ³	yes	yes	yes	yes	no
polycarbonate	yes ⁴	no	yes	yes ³	no	yes ⁵	yes	yes	no
polypropylene	yes	no	yes	yes	yes	yes ⁶	yes ⁷	yes	no
polyethylene	no	no	yes	yes	yes ⁸	yes	yes	yes	yes
cellulose propionate	no	no	no	no	no	yes	yes	yes	no
stainless steel	yes	yes	yes	yes	yes ⁹	no	yes	yes	no

¹ To avoid deformation, autoclave tubes or bottles upside-down in a tube rack at 15 psig for no more than 20 minutes (allow to cool before removing from tube rack). DO NOT autoclave capped or sealed tubes or bottles. Do not autoclave tube or bottle accessories made of Noryl (a registered trademark of GE Plastics).

² Flammable; do not use in or near operating centrifuges.

³ Do not use if there is methanol in the formula.

⁴ Tube life will be significantly reduced by autoclaving.

⁵ Discoloration may occur.

⁶ Can be used if diluted.

⁷ Below 26°C only.

⁸ Below 21°C only.

⁹ Marginal.

DECONTAMINATION

If tubes and/or accessories are contaminated with radioactive or pathogenic solutions, decontaminate or dispose of them following appropriate safety guidelines and/or regulations.