

PRODUCT CARE

The lifetime of a tube, bottle, adapter, or rotor is affected by speed, frequency of use, sample material, cleaning and sterilization methods, and general care. The following sections on Rotor Care, Tube and Bottle Care, Chemical Resistance, and Sterilization and Decontamination provide the information needed for a prolonged and safe product life.

ROTOR CARE

Cleaning

The rotor should be cleaned after each run with a 1% mild, non-alkaline detergent solution. It should be rinsed well with distilled water (if possible) and dried thoroughly with an absorbent cloth, air blast, or in a low temperature drying oven. A twisted bristle brush may be used to loosen encrusted material, but be careful not to scratch the rotor surface.

Failure to keep rotors clean will cause corrosion of the metal, especially in the case of aluminum rotors and rotor parts. Corrosion leads to structural weakening and eventually to the failure of the rotor.

Inspection

During the cleaning procedure, inspect the rotor body and the buckets for signs of corrosion as indicated by pitting and scratching. Check the O-rings, drive pins, bucket pins, etc., for cracks, tears, abrasion, and uneven surfaces. Replace any damaged parts. Contact your SORVALL® Service Representative for information about inspection of rotors or rotor replacement.

Handling

Rotors should be handled carefully so that they reach their maximum life expectancy. The rotor surface must not be struck with tools or other objects which can cause dents and scratches. When applicable, the rotor cover must be securely fastened during a run, and the rotor locking stud must be checked for tightness. Failure to do so can cause damage to both the rotor and the centrifuge during a run.

Coating

A coating of paste wax may be applied to the tube cavities as an added protection against corrosion.

Storing

The rotor and its components must be clean and dry before they are stored. Store the rotor upside down with the cover removed in a low humidity location where it cannot be scratched or dented.

Sterilization and Decontamination

Refer to the section titled "Sterilization and Decontamination" to select the technique best suited to each rotor.

ASK YOUR SORVALL® SERVICE REPRESENTATIVE FOR A SORVALL® ROTOR CARE AND MAINTENANCE BROCHURE.

TUBE AND BOTTLE CARE

Before each use, inspect SORVALL® tubes or bottles for signs of cracking, crazing, or spotting. If one or more of these signs are in evidence, the tubes or bottles must be restricted to very low speed use or discarded.

After each use, SORVALL® tubes and bottles must be thoroughly cleaned with a 1% mild, non-alkaline detergent solution. A twisted bristle brush may be used to loosen encrusted material.

NOTE: SEPARATE CAPS AND/OR SEALING ASSEMBLIES FROM OAK RIDGE BOTTLES BEFORE AUTOCLAVING.

PRODUCT CARE (continued)

SORVALL® TUBE AND BOTTLE MATERIALS

Tube/Bottle Material	Appearance	Temperature Use Range (°C)		Brittleness Temperature (°C)	General Characteristics
		Min	Max		
Polyallomer	Contact— Translucent Colorless	—	80	-40	Good chemical resistance, resists stress cracks, somewhat flexible. Thin wall is puncturable.
Polycarbonate	Transparent Colorless	—	120	-135	Strong, glass-like, reusable plastic. Excellent temperature and speed range.
Polypropylene	Translucent Colorless	0	120	0	Very broad chemical resistance and good stress crack resistance. Liquid lines visible. Will deform under centrifugation when not supported by proper adapter.
Polysulfone	Transparent Yellow	—	120	-100	Strong, temperature-resistant plastic. Excellent chemical resistance.
Polyethylene	Translucent Milky White	0	60	-100	Broad chemical resistance.
Cellulose Acetate Butyrate	Transparent Colorless	0	60	—	Strong thermoplastic. Good chemical resistance. Only moderate heat resistance.
Stainless Steel	Opaque	—	>180	—	Excellent for specific resistance, high temperature, and high speed.
Pyrex® Glass	Clear	—	120	—	Excellent chemical resistance. Life affected by use, handling, high RCF, sterilization process.
Corex® Glass	Clear	—	300	—	Four to six times the strength of conventional glass. Excellent chemical resistance and durability.
Polyethyleneterephthalate (Polyclear™)	Transparent Colorless	0	20 ¹	0	Somewhat flexible. Thin wall is puncturable.

⁽¹⁾ May be used at temperatures up to 25°C, but tubes may be difficult to remove.

SORVALL® TUBE AND BOTTLE CARE AND USE

Tube/Bottle Material	CHEMICAL RESISTANCE ¹						Max ² Rotor Speed	STERILIZATION AND DECONTAMINATION ³			
	Weak Acids	Strong Acids	Weak Bases	Strong Bases	Organic Solvents	Chloride & Hypochlorite		Autoclave	Gas	Chemical ¹	UV
Polyallomer	Yes	Below 60°C	Yes	Below 60°C	Below 60°C	Yes	80,000	Yes (121°C)	Yes	Yes	No
Polycarbonate	Yes	No	No	No	No	Yes	65,000	Yes ⁴ (121°C)	Yes	Yes	No
Polypropylene	Yes	Below 60°C	Yes	Below 60°C	Below 60°C	Yes	50,000	Yes (121°C)	Yes	Yes	No
Polysulfone	Yes	Yes	Yes	Yes	No	Yes	21,000	Yes ⁴ (121°C)	Yes	Yes	Yes
Polyethylene	Yes	Below 60°C	Yes	Below 60°C	No	Yes	8,000	Yes (115°C)	Yes	Yes	No
Cellulose Acetate Butyrate	Yes	No	Yes	No	No	Yes	40,000	No	— ⁵	Yes	Yes
Stainless Steel	No	No	Yes	Yes	Yes	No	20,000	Yes (∞)	Yes	Yes	Yes
Pyrex® Glass	Yes	No	Yes	No	Yes	Yes	5,000	Yes (121°C)	Yes	Yes	Yes
Corex® Glass	Yes	Yes (except HF and H ₃ PO ₄)	Yes	Yes	Yes	Yes	10,000	Yes (300°C)	Yes	Yes	Yes
Polyethyleneterephthalate (Polyclear™)	Yes	No	Yes	No	No	Yes	55,000	No	Yes	Yes	No
Polyetherimide	Yes	Yes	Yes	Yes	No	Yes	70,000	Yes (121°C)	Yes	Yes	Yes

⁽¹⁾ Consult Chemical Resistance Chart for more specific information (page F-27).

⁽²⁾ As currently recommended in SORVALL® rotors. Some tube designs may be rated to a lower speed.

⁽³⁾ Consult Sterilization and Decontamination Chart for more specific information (page F-26).

⁽⁴⁾ Reduces mechanical strength under repeated autoclaving.

⁽⁵⁾ Performance unknown, suggest testing to avoid loss of material.

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