Physical and Chemical Properties Of Corning Plastic Centrifuge Tubes

Centrifuge Tubes

The following information is provided to serve as a general guideline for determining suitability of Corning® centrifuge tubes for your applications. In addition, Corning recommends following the procedures outlined by the centrifuge manufacturer, as well as conducting a trial run to determine proper conditions before any critical use begins.

Corning centrifuge tubes are tested for leakage. They should not break or leak if used in a properly balanced rotor with suitable carriers, holders, and adapters that fully support the tubes when run in accordance with the guidelines in this section. These tubes are intended for one-time use only; reuse is not recommended as breakage or leakage may occur.

The recommended working temperature range for Corning centrifuge tubes is 0-40°C. The suitability of these tubes for storage below 0°C depends on both the solution and the storage conditions. It is strongly recommended that a trial run be performed under actual conditions to test the suitability of the tubes for frozen storage.

I. Physical Properties of Disposable Plastic Centrifuge Tubes

	Polypropylene	Polyethylene Terephthalate
Recommended Working Temp.*	0-40°C	0-40°C
Heat Distortion Point	121°C	70°C
Flexibility	Moderate	Rigid
Maximum RCF:		
Screw Cap Microcentrifuge Tube	13,000 x g	---
Snap Cap Microcentrifuge Tube	17,000 x g	---
15 mL Tube	15,500 x g	3600 x g
50 mL Tube	15,500 x g	3600 x g
250 mL Tube	6,000 x g	---
500 mL Tube	6,000 x g	---

* For centrifugation only; tubes may be used at lower temperatures for storage. Test under actual conditions before use.

The RCF (relative centrifugal force) ratings for Corning® disposable centrifuge tubes have been established at room temperature using tubes filled to nominal capacity with water and spun in a horizontal rotor centrifuge for 5 minutes. The centrifuge must be equipped with the recommended carriers, adapters, and cushions that fully support the tubes. If an angle head rotor is used or proper support is not provided, RCF values will be lower. Use of liquid other than water may also lower RCF values. Please consult your centrifuge specifications and the nomogram table to determine speeds at which maximum RCF is achieved.

Chemical Compatibility of Disposable Plastic Centrifuge Tubes

The mechanical strength, flexibility, color, weight, and dimensional stability of all plastic centrifuge tubes are affected to varying degrees by the chemicals with which they come in contact. Specific operating conditions, especially temperature, relative centrifugal force (RCF), rotor type, carrier design, and run length will also affect tube performance.

© 2015 Corning Incorporated. All Rights Reserved.

II. Chemical Resistance of Corning® Disposable Plastic Centrifuge Tubes*

Chemical Class	Polyethylene Terephthalate	Polypropylene	Polyethylene Caps
Acids (weak)	1	1	1
Acids	3	1	1
Alcohols	1	1	1
Aldehydes	3[a]	2[a]	1
Bases	3	1	1
Esters	3	3	3
Hydrocarbons:			
Aliphatic	1	2	3
Aromatic	3	3[b]	3
Halogenated	3	3	3
Ketones	2[c]	2[c]	2

*At room temperature for 24 hours.

Key:

1. Recommended.
2. Suitable for most applications. However, a trial run under specific operating conditions is recommended.
3. Not recommended.

Note:

a. Formaldehyde: Rated 1.
b. Phenol: Rated 1.
c. Acetone: Rated 1.

© 2015 Corning Incorporated. All Rights Reserved.