

**SUNY Downstate Medical Center -University Hospital  
of Brooklyn Network  
Department of Pathology Policy and Procedure**



**Subject: LAB 45 QUALITY CONTROL OF THERMOMETERS  
PROTOCOL**

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Supporting Documents:

Approval Workgroup: Laboratory Administration  
Approval Group

Revision: 3

## I. PURPOSE:

To insure the accuracy of temperature readings of all thermometers.

### **MATERIALS REQUIRED:**

37°C water bath

Ertco reference thermometer

A container large enough to hold several thermometers which will also contain a 10% glycerol solution.

### **10% glycerol solution**

In a large enough container, mix 450 mL of tap water with 50 mL of glycerin.

## II. PROCEDURE:

### 1. **Incubator Thermometers**

- A. Place all incubator thermometers, including the water bath thermometer in a 37°C water bath along with the reference thermometer.
- B. Record temperatures on the *Quality Control of Thermometers* (incubator/water baths) form.

Acceptable Temperature Limits:  $\pm 1^{\circ}\text{C}$  of the reference thermometer.

### 2. **Refrigerator Thermometers**

- A. Place a container filled with 10% glycerol solution in a refrigerator (temperature 2-6°C) for approximately one hour so the solution can reach the temperature of the refrigerator.
- B. Place all the refrigerator thermometers into this container along with the reference thermometer.
- C. Record temperatures on the *Quality Control of Refrigerators and Freezers* form.

Acceptable Temperature Limits:  $\pm 1^{\circ}\text{C}$  of the reference thermometer.

### 3. **Freezer Thermometers**

- A. Place all freezer thermometers, along with the reference thermometer, in a freezer with the temperature below—18°C for 5 minutes.
- B. Record temperatures on the *Quality Control of Refrigerators and Freezers* forms.
- C. Acceptable Temperature Limits:  $\pm 1^{\circ}\text{C}$  of the reference thermometer.
- D. Any thermometer that reads outside of acceptable limits or shows any irregularity must be brought to the attention of the Supervisor and discarded.

### 4. **Reference Thermometer**

- A. The reference thermometer is calibrated annually using measurement standards traceable to the National Institute of Standards and Technology (NIST). A Certificate of Calibration is generated as proof of proper function.

**B.** The reference thermometer is sent to the company annually listed below for calibration.

**State Technology Inc.  
510 Heron Drive, P.O. Box 266  
Bridgeport, NJ 08014**

**1-856-467-8009  
FAX: 1-856-467-9481**

**5. Broken Mercury Thermometers**

Broken thermometers are to be disposed of in a safe manner. Call extension 2395; Environmental Health and Safety personnel will come to discard the thermometers properly.

**REFERENCE:**

AABB Technical Manual Fifteenth Edition, 2005, method 7.2 p.821-822.

CAP Transfusion Medicine Checklist, 9/07

AABB Standards, Twenty-Fifth Edition, 2008.