



**US Environmental Protection Agency
Office of Pesticide Programs**

**Standard Operating Procedure for
Monitoring Temperature of Water
Baths for Holding (Tempering) Media**

Date Revised: 03-04-08

EPA/OPP MICROBIOLOGY LABORATORY
ESC, Ft. Meade, MD

Standard Operating Procedure
for
Monitoring Temperature of Water Baths for Holding (Tempering) Media

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1.0 SCOPE AND APPLICATION:

1.1 This protocol describes the quality control requirement for recording the temperatures of water baths used for holding (tempering) media.

2.0 DEFINITIONS:

2.1 Tempering is the process of maintaining the temperature of the medium or reagents by using equipment with controlled temperature.

2.2 ASTM = American Society for Testing and Materials

2.3 NIST = National Institute of Standards and Technology

3.0 HEALTH AND SAFETY: Not applicable

4.0 CAUTIONS:

4.1 When hot autoclaved medium is kept in the water bath, it can take 30-60 minutes or longer for the water bath to equilibrate. The temperature should be taken after the equilibration period.

5.0 INTERFERENCES: None

6.0 PERSONNEL QUALIFICATIONS:

6.1 Personnel are required to be knowledgeable of the procedures in this SO
Documentation of training and familiarization with this SOP can be found in the training file for each employee.

7.0 APPARATUS AND MATERIALS:

7.1 Precision Scientific Series 180: Water bath # 1, Serial Number 698091238.

7.2 Precision Scientific Series 183: Water bath # 2, Serial Number 9505426.

7.3 Precision Scientific Series 180: Water bath # 3, Serial Number 698101642.

7.3 Scientific Products (S/P): Water bath # 4, Serial Number 0678.

7.4 Thermometers

- 8.0 INSTRUMENT OR METHOD CALIBRATION: Not applicable
- 9.0 SAMPLE HANDLING AND STORAGE: Media are allowed to equilibrate with the water in the bath for the appropriate time intervals.
- 10.0 PROCEDURE AND ANALYSIS:
- 10.1 Set the temperature of the water bath to 45-50EC, as appropriate for the media that is being held in the water bath. Media must be equilibrated to the water bath temperature before use. Equilibration of 1 L of media takes approximately 30 minutes and larger volumes may require additional time. Record the temperature of the water bath at the time the media is used (e.g., just prior to pouring in plates). The temperature recorded must reflect adjustments by the correction factor for the thermometer specified.
- 11.0 DATA ANALYSIS/CALCULATIONS: None
- 12.0 DATA MANAGEMENT/RECORDS MANAGEMENT:
- 12.1 Data will be recorded promptly, legibly and in indelible ink on the Water Bath Temperature Record Form (see 16.1). Completed forms are archived in notebooks kept in secured file cabinets in the file room D217. Only authorized personnel have access to the secured files. Archived data is subject to OPP=s official retention schedule contained in SOP ADM-03, Records and Archives.
- 13.0 QUALITY CONTROL:
- 13.1 The accuracy of the thermometers is checked annually against a NIST traceable thermometer (see SOP EQ-02, Thermometers).
- 14.0 NONCONFORMANCE AND CORRECTIVE ACTION: None
- 15.0 REFERENCES: None
- 16.0 FORMS AND DATA SHEETS:
- 16.1 Water Bath Temperature Record Form

