



**STANDARD OPERATING PROCEDURE**

|   |                        |
|---|------------------------|
| <b>Department:</b> Microbiology         | <b>SOP No.:</b>        |
| <b>Title:</b> Calibration of Water Bath | <b>Effective Date:</b> |
| <b>Supersedes:</b> Nil                  | <b>Review Date:</b>    |
| <b>Issue Date:</b>                      | <b>Page No.:</b>       |

**1.0 Objective**

To lay down a procedure for calibrating the water bath.

**2.0 Scope**

This Standard Operating Procedure is applicable for QC department of formulation plant.

**3.0 Responsibility**

Executive/Officer-Microbiology : Shall be responsible for calibrating the Water Bath as per procedure mentioned in this SOP.

Head-QC/Designee : Shall be responsible for implementation and compliance of this SOP.

**4.0 Abbreviations and Definitions**

QC : Quality Control

SOP : Standard Operating Procedure

**5.0 Procedure**

5.1 Place four calibrated thermometers at 4 different locations in water bath as displayed in Annexure-1.

5.2 Switch "ON" the Instrument and set the temperature by rotating the knob in clockwise and anti clockwise directions.

5.3 Calibrate the water bath for three set temperatures, 45<sup>0</sup>C, 60<sup>0</sup>C and 90<sup>0</sup>C.

5.4 Set the temp of water bath at 45<sup>0</sup>C, when digital temperature indicator displays 45<sup>0</sup>C, record the temperature of all thermometers in Annexure-2. Take three concordant temperature reading of temp at every 10 minutes interval.

5.5 After completion of readings at 45<sup>0</sup>C set the temperature of water bath at 60<sup>0</sup>C and proceed as mentioned in 5.4.

5.6 Then set the temperature at 90<sup>0</sup>C proceeds as mentioned in 5.4.

5.7 After completion of calibration switch 'OFF' the instrument.

5.8 If the temperatures do not fall in the range then contact engineering department for maintenance.



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5.9 The temperature displayed by digital temperature Indicator and by 4 calibrated thermometer shall not differ by more than  $\pm 3^{\circ}\text{C}$  from each other.

5.10 Frequency of calibration: Half yearly

**6.0 Forms and Records**

6.1 Location of thermometers in Water Bath : Annexure-I

6.2 Water Bath Calibration Record : Annexure-II

**7.0 Distribution**

7.1 Master Copy : Documentation Cell (Quality Assurance)

7.2 Controlled Copies : Quality Control, Quality Assurance

**8.0 History**

| Date | Revision Number | Reason for Revision |
|------|-----------------|---------------------|
|      | 00              | New SOP             |



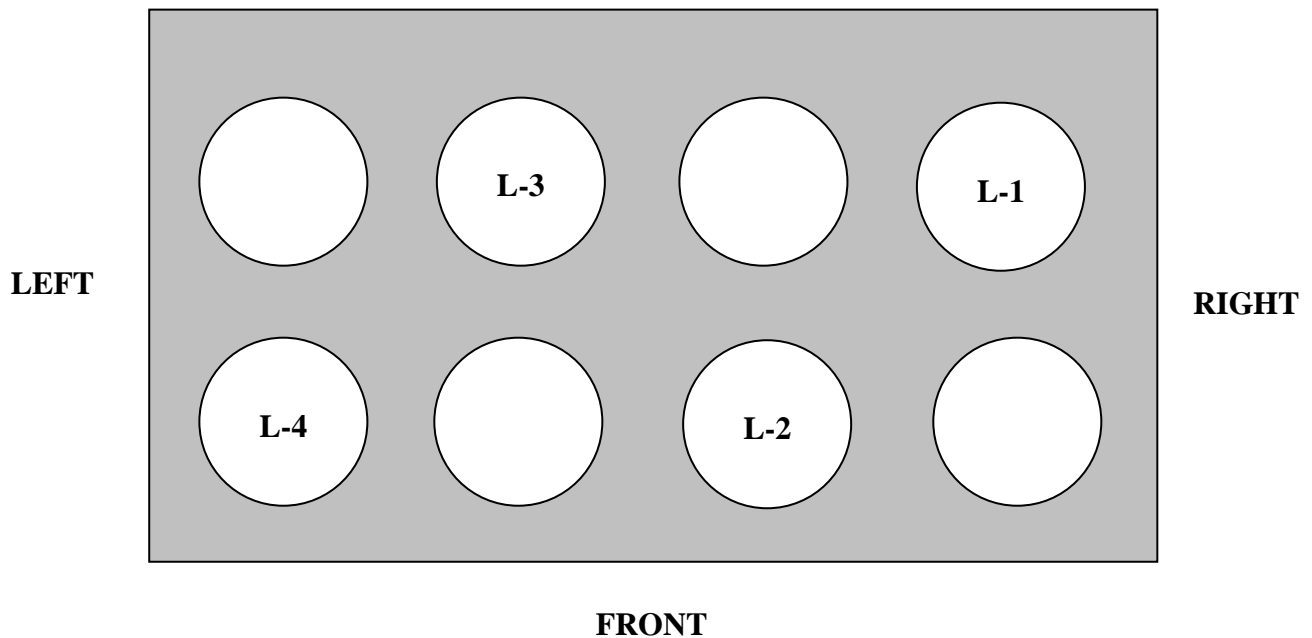
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**ANNEXURE I**

**DIAGRAM FOR LOCATION OF THERMOMETERS IN WATER BATH**

**BACK**



**Note:** L stands for location of Thermometer.



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**ANNEXURE II**

**WATER BATH CALIBRATION RECORD**

**Instrument : Water Bath**

| Set Temperature | Thermometer No. | Location No. | Temp. On Display |  |  | Temp On Thermometer |  |  | Difference In Temperature |  |  |
|-----------------|-----------------|--------------|------------------|--|--|---------------------|--|--|---------------------------|--|--|
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |
| 45°C            |                 |              |                  |  |  |                     |  |  |                           |  |  |
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |
| 60°C            |                 |              |                  |  |  |                     |  |  |                           |  |  |
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |
| 90°C            |                 |              |                  |  |  |                     |  |  |                           |  |  |
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |
|                 |                 |              |                  |  |  |                     |  |  |                           |  |  |

**Equipment ID:**

**Period of Calibration:** Half Yearly

**Date of Calibration:**

**Next Calibration Due On:**

**Remarks:** The Instrument is Calibrated and Qualified/ Out of Calibration and Not Qualified for use.

**Acceptance Criteria:**  $\pm 3^{\circ}\text{C}$

**Calibrated By:**

**Approved By:**

**Date:**

**Date:**