



STANDARD OPERATING PROCEDURE

Department: Quality Control	SOP No.:
Title: Operation and Calibration of Conductivity meter	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

1.0 OBJECTIVE:

To lay down a procedure for Operation & Calibration of Conductivity meter.

2.0 SCOPE:

This SOP is applicable to Operation & Calibration of Conductivity meter.

This SOP covers the operation and calibration of Conductivity meter as per the current Pharmacopoeias (BP/USP) & In-House requirements.

3.0 RESPONSIBILITY:

Officer, Executive – Quality control
Head– Quality Control

4.0 PROCEDURE:

4.1 Operation:

4.1.1 Ensure the cleanliness of the instrument.

4.1.2 Ensure the Conductivity meter is perfectly grounded to electrical supplies, other wise slow response of electrode take place.

4.1.3 Ensure the connectivity of RTD probe and electrode.

4.1.4 Switch ON the Main power supply and power ‘ON’ / ‘OFF’ key at the rear of the unit.

4.1.5 For Measuring conductivity of sample:

4.1.5.1 After the switching on the instrument, only two keys are active “RESET” and “MODE”.

4.1.5.2 Dip the electrode in the sample.

4.1.5.3 Pressing “RESET” key to initialize. This will give a beep and display as

LABINDIA PICO V2.16 Conductivity meter

4.1.5.4 Press Mode key to display

Conductivity Mode Press ENTER or MODE
--



STANDARD OPERATING PROCEDURE

Department: Quality Control	SOP No.:
Title: Operation and Calibration of Conductivity meter	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

4.1.5.5 Press ENTER to go to cell constant and again press ENTER.

4.1.5.6 Con = ABCD μ S ****C
K = *** * ** °C

Where, con = conductivity in micro seimen, K*** = cell constant, Sample Temperature= °C,
**** C = Calibrated, * standard mode

4.1.5.7 Press FWD/TEMPCO button.

4.1.5.8 Enter Coefficient as 4.55 for purified water and press ENTER.

4.1.5.9 Enter coefficient as 2.05 for calibration of 147 μ S.cm⁻¹ standard solution.

4.1.5.10 Select the temperature as 25°C by pressing 1 and then ENTER.

4.1.5.11 Select the Tempco mode AUTO by pressing 1 and then ENTER.

4.1.5.12 Wait for Stabilizing... display and press ENTER if the conductivity reading is stable.

4.1.5.13 Below display will appear & showing conductivity of solution.

Con = A.BCD μ S ****C
K = *** * ** °C

Where, con = conductivity in micro seimen, K*** = cell constant, Sample Temperature= °C,
**** C = Calibrated, * standard mode

4.2 For Calibration (Measuring conductivity of Standard Solution)

4.2.1 Rinse the conductivity electrode with purified water.

4.2.2 Calibration shall be done by using following potassium chloride conductivity standard solutions.

147 μ S.cm⁻¹ standard solution – Frequency: Weekly.

26.6 μ S.cm⁻¹ standard solution – Frequency: Daily.

4.2.3 Prepare 147 μ S.cm⁻¹ standard solutions of potassium chloride containing 0.0822 gm respectively of potassium chloride per 1000 gm of solution, using carbon dioxide free water. Prepare it from distilled water, the conductivity of which does not exceed 2 μ s cm⁻¹.

4.2.4 Prepare 26.6 μ S.cm⁻¹ standard solutions of potassium chloride containing 0.0149 gm respectively of potassium chloride per 1000 gm of solution, using carbon dioxide free water. Prepare it from distilled water, the conductivity of which does not exceed 2 μ s cm⁻¹.

4.2.5 Transfer 30 ml of the standard solution into a clean dry beaker and dip the electrode into the



STANDARD OPERATING PROCEDURE

Department: Quality Control	SOP No.:
Title: Operation and Calibration of Conductivity meter	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

solution.

- 4.2.6 Operation for 4.1.5.3 to 4.1.5.13 for calibration of conductivity meter by using standard solutions.
- 4.2.7 Note instrument Logbook.
- 4.2.8 Record the calibration results of $26.6 \mu\text{S}\cdot\text{cm}^{-1}$ & $147 \mu\text{S}\cdot\text{cm}^{-1}$ standard solutions in the format as per Annexure-I and Annexure-II respectively.
- 4.2.9 Acceptance : $\pm 2 \mu\text{S}\cdot\text{cm}^{-1}$ of the Conductivity of standard solutions (as mentioned in the certificate)
- 4.2.10 If the instrument is out of calibration, put Out of calibration label and proceed as per SOP.

4.3 PRECAUTIONS:

- 4.3.1 Keep the cell in Air.
- 4.3.2 Do not keep the electrode in continuous contact with the sample solution.
- 4.3.3 Do not wipe the glass electrode with any hard material (or) use only tissue paper for wiping.

5.0 ANNEXURE (S) :

Annexure - I: Daily Calibration Record of conductivity meter.

Annexure - II: Weekly Calibration Record of conductivity meter.

6.0 REFERENCE (S):

SOP: Preparation, Approval, Distribution control, revision and destruction of Standard operating Procedure (SOP).

7.0 ABBREVIATION (S)/DEFINITION (S):

SOP : Standard operating Procedure

REVISION CARD

S. No.	REVISION No.	REVISION DATE	DETAILS OF REVISION	REASON (S) FOR REVISION	REFERENCE CHANGE CONTROL No.
1.	00	----	----	New SOP	----



PHARMA DEVILS
QUALITY CONTROL DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Quality Control	SOP No.:
Title: Operation and Calibration of Conductivity meter	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

ANNEXURE I

DAILY CALIBRATION RECORD OF CONDUCTIVITY METER.				Reference SOP:
Location		Model No.	PICO+	
Manufactured By	Lab India	Identification No.		
Calibration Frequency	Daily			

Acceptance criteria: _____ $\pm 2 \mu\text{S.cm}^{-1}$

Date	Potassium Chloride Weight In gm	Make Up 1000 ml Purified Water	Observed value	Calibrated by	Checked by	Remarks



PHARMA DEVILS
QUALITY CONTROL DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Quality Control	SOP No.:
Title: Operation and Calibration of Conductivity meter	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

ANNEXURE II

WEEKLY CALIBRATION RECORD OF CONDUCTIVITY METER

Reference SOP No.

Location		Model No.	
Manufactured By	Lab India	Identification No.	
Frequency	Weekly		

Acceptance criteria: Certificate value: _____ $\pm 2 \mu\text{S.cm}^{-1}$

Date	Potassium Chloride Weight In gm	Make Up 1000 ml Purified Water	Observed value	Calibrated by	Checked by	Remarks