



PHARMA DEVILS

PRODUCTION DEPARTMENT

STANDARD OPERATING PROCEDURE

Title: Operation and Calibration of pH Meter

SOP No.:		Department:	Production	
		Effective Date:		
Revision No.:	00	Revision Date:		
Supersede Revision No.:	Nil	Page No.:	1 of 6	

1.0 OBJECTIVE:

To lay down a Procedure for Operation and Calibration of pH Meter.

2.0 SCOPE:

This SOP is applicable for Operation and Calibration of pH Meter used in Production Department.

3.0 RESPONSIBILITY:

Officer / Executive Production

4.0 ACCOUNTABILITY:

Head Production

5.0 ABBREVIATION:

°C	degree Celsius
KCl	Potassium Chloride
Ltd.	Limited
M	Molarity
ml	Milliliter
pH	Potential of Hydrogen
Pvt.	Private
QA	Quality Assurance
SOP	Standard Operating Procedure

6.0 PROCEDURE:

6.1 OPERATION:

6.1.1 Check and ensure that the instrument is clean.

6.1.2 Check the due date of Calibration.

6.1.3 Switch "ON" the mains then press the switch "ON/OFF" of the pH meter.

6.1.4 Remove the glass electrode/ Flat Probe from 0.3 M KCL (Saturated Potassium chloride solution), wash thoroughly with purified water and wipe with tissue paper.

6.1.5 Press the "Cal/Meas" switch and insure that the display of pH meter shows "Meas".

6.1.6 Dip the glass electrode/ Flat Probe in the beaker containing test solution/suspension.

6.1.7 Wait till the reading of pH of solution stabilized and screen of pH meter displayed "READY".

6.1.8 Press the switch of "HOLD" and note the reading in the respective record.



STANDARD OPERATING PROCEDURE

Title: Operation and Calibration of pH Meter

SOP No.:		Department:	Production	
		Effective Date:		
Revision No.:	00	Revision Date:		
Supersede Revision No.:	Nil	Page No.:	2 of 6	

6.1.9 Record the details in format “**pH Meter Operation and Usage Log**” as shown in Annexure –I.

6.1.10 Rinse the pH glass electrode/Flat Probe and Temperature probe 2-3 times with purified water and wipe dry with tissue paper.

6.1.11 Dip the glass electrode/Flat probe in 0.3 M KCl when not in use.

6.2 CALIBRATION:

6.2.1 Store buffer solution in Borosilicate glass bottles and use within one week from date of preparation.

6.2.2 Buffer solution containing any suspended particles should be discarded.

6.2.3 Rinse the pH glass electrode/Flat Probe and Temperature probe 2-3 times with purified water and wipe dry with tissue paper.\

6.2.4 Press the “Cal/Meas” switch and ensure that the display of pH meter shows “Cal”.

6.2.5 Pour one by one 30 ml (approx.) buffer solutions quantity having pH of 6.87, 4.01 & 9.18 into different status marked beakers for pH solution to perform the calibration of pH meter and ensure the pH electrode emerged inside the pH solution.

6.2.6 Discarded the pH solution quantity of pH 6.87, 4.01 & 9.18 after performing calibration compliance of pH Meter.

6.2.7 Dip the glass electrode in 30 ml pH 6.87 buffer solution in a beaker and stir gently.

6.2.8 Wait till the reading of pH of buffer solution stabilized and screen of pH meter displayed “READY”. Then press the switch “ENTER”.

6.2.9 Remove glass electrode/ Flat probe from the buffer & rinse with purified water to make it free of buffer, wipe dry with tissue paper.

6.2.10 Dip the glass electrode in 30 ml pH 4.01 buffer solution in a beaker and stir gently.

6.2.11 Wait till the reading of pH of buffer solution stabilized and screen of pH meter displayed “READY”. Then press the switch “ENTER”.

6.2.12 Remove glass electrode/Flat probe from the buffer & rinse with purified water to make it free of buffer, wipe dry with tissue paper.

6.2.13 Dip the glass electrode in 30 ml pH 9.18 buffer solution in a beaker and stir gently.



PHARMA DEVILS

PRODUCTION DEPARTMENT

STANDARD OPERATING PROCEDURE

Title: Operation and Calibration of pH Meter

SOP No.:		Department:	Production	
		Effective Date:		
Revision No.:	00	Revision Date:		
Supersede Revision No.:	Nil	Page No.:	3 of 6	

- 6.2.14** Wait till the reading of pH of buffer solution stabilized and screen of pH meter displayed “READY”. Then press the switch “ENTER”.
- 6.2.15** Remove glass electrode/Flat probe from the buffer & rinse with purified water to make it free of buffer, wipe dry with tissue paper.
- 6.2.16** All the observations shall be recorded in format “**Calibration Record of pH Meter**” as shown in **Annexure-II**.
- 6.2.17** Acceptance criteria / Tolerance Limit: pH \pm 0.02 of Standard buffer solution.
- 6.2.18** All the measurement shall be carried out at temperature 25 \pm 2°C.
- 6.2.19** Rinse the electrode each time with purified water and wipe dry with tissue paper to dry.
- 6.2.20** If Calibration not found satisfactory i.e. all result not come within Acceptance criteria during calibration, inform to Head of Department and affix ‘Out of Order’ label on the Instrument.
- 6.2.21** **FREQUENCY:** Daily or Whenever Required.

7.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	pH meter operation and usage log	
Annexure-II	Calibration record of pH meter	

ENCLOSURE: SOP training Record

8.0 DISTRIBUTION:

- Controlled Copy No. 01 Quality Assurance
- Controlled Copy No. 02 Production
- Master Copy Quality Assurance

9.0 REFERENCES:

In House



PHARMA DEVILS

PRODUCTION DEPARTMENT

STANDARD OPERATING PROCEDURE

Title: Operation and Calibration of pH Meter

SOP No.:		Department:	Production	
		Effective Date:		
Revision No.:	00	Revision Date:		
Supersede Revision No.:	Nil	Page No.:	4 of 6	

10.0 REVISION HISTORY:

CHANGE HISTORY LOG

Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By

