

# Calibration report

## How to interpret?

Dr Sanjay Gupta

# What we do with calibration report?

- Tell calibration company to calibrate
  - Get calibration reports
  - File it
- 
- Most important thing for blood bank in calibration report is – Date and due date of calibration.

# Calibration definition and standards

- **Aim of calibration** – To ensure proper functioning of equipment by finding error in blood bank equipment and rectify error if required
- **Definition** – Documented comparison of the measurement device to be calibrated against a traceable reference device
- **Standards for calibration** –
  - Proper calibration (**Refer** – ISO/IEC 17025 standards for details of calibration and BIPM for international measurement systems)
  - At defined frequencies
  - Traceable to international system of units (SI)

## AUSSIN SHUBH HOSPICA CALIBRATION LABORATORY

508- DEV PRIME, B/H DIVYA BHASKAR PRESS, OFF S.G ROAD, AHMEDABAD, GUJARAT.

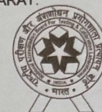
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# CERTIFICATE



Calibrator machines is calibrated under NABL Laboratory

### ❖ DETAILS OF DEVICE UNDER CALLIBRATION

Customer Name:- APOLLO HOSPITAL INTERNATIONAL		Certificate / Id No	ASH-22357
Add:- BHAT, GANDHINAGAR, GUJARAT-382424.			
Name Of Instrument	PIPETTE	Date Of Issue	14-05-2022
Make	EPPENDORF	Date Of Calibration	13-05-2022
Model	RESEARCH	Next Calibration Date	12-11-2022
Serial No	2040065	Location	BLOOD GROPING & SEROLOGY
Asset No	NA	Temperature & RH	22 deg C & 45%

### ❖ TRACEABILITY

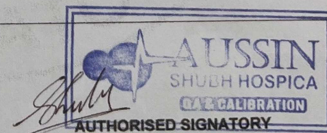
Sr. No	Use Of Calibrator	Make	Model	Sr. No	Due Date
1	DIGITAL WEIGHING SCALE	DIGITAL KART	ASHW01	NA	25/02/2023

### ❖ TEST REPORT

Sr. No	Test	Unit	Set Value	Observed Value	Error	Uncertainty	result
1	WEIGHT	µl	100	100.003	0.003	± 3 %	Pass
2			200	200.008	0.008	± 3 %	Pass
3			500	500.017	0.017	± 3 %	Pass
4			700	700.024	0.024	± 3 %	Pass
5			1000	999.993	-0.007	± 3 %	Pass

CALIBRATED/TESTED BY:

RAHUL PATEL



\* Mean of Five readings

Note: The indicated Uncertainties are estimated expanded Uncertainties for Coverage factor 'k'=2 providing a level of confidence approx. = 95% for distribution

The calibration results reported in this certificate are valid at the time of and under the stated conditions of measurement. This report is not to be used to claim product endorsement by Aussin any agency. This document shall not be reproduced, except in full, without the written approval of Aussin. This is for technical information of

# Review of Calibration certificate – Contents?

- Name and other details of calibration agency
- Title of document
- Accreditation symbol – like NABL
- Unique identification number of calibration report
- Page number on each page of calibration report and total number of pages
- Customer (Blood centre) information
- Details of equipment under calibration
- Details of calibration standard(s) used
- Environmental conditions during calibration
- Measurement result of calibration
- Traceability
- Calibration done by
- Notes by calibration agency

# Review of Calibration certificate

- **Important Note:** - “Specifications” of calibration should be mentioned in Purchase order
- **Scope of accreditation of calibration agency** – for all parameters
- Resolution/Accuracy and range of standard should be more than equipment calibrated.
- Validity of calibration of Standard used
- Certificate should have all Parameters to be calibrated.
- **Calibration in working range of equipment**
- **Points at which equipment should be calibrated** – Always refer manufacturer instructions for points to be calibrated.
- **Measurement readings** – This is most important point to be seen while reviewing calibration report.
- **Acceptable error/Tolerance**
- **Uncertainty of Measurement**
- **Traceability**
- **Inhouse Calibration** – If blood centre staff is doing calibration, they should have proper training/experience/competence and standard operating procedure for calibration.

# Example

- Of few calibration certificates

# Refrigerated centrifuge

Parameter	Standard	UUC	Error
Speed (RPM)	1000	1010	+10
	2000	2020	+20
	5000	5050	+50
	10000	10100	+100

# Refrigerated centrifuge

- Parameters to be calibrated (Temperature and Time)?
- Working range?
- Points at which equipment should be calibrated
- Proper calibration – Is value shown is attainable?
- Acceptable error/Tolerance
- Measurement of uncertainty

# Blood bank refrigerator

Parameter	Standard	UUC	Error	Tolerance	Uncertainty
Temperature (degree C)	2	2.5	+0.5	+/- 0.5°C	+/- 1°C
	3	3.2	+0.2	+/- 0.5°C	+/- 1°C
	4	4.5	+0.5	+/- 0.5°C	+/- 1°C
	5	5.4	+0.4	+/- 0.5°C	+/- 1°C
	6	6.5	+0.5	+/- 0.5°C	+/- 1°C

# Deep Freezer

Parameter	Standard	UUC	Error
Temperature (degree C)	-80	-74	+6
	-60	-63.3	+3.3
	-40	-40.2	+0.2
	-20	-20.1	+0.1
	0	0	+0