# National Accreditation Board for Testing and Calibration Laboratories

## SCOPE OF ACCREDITATION

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|---|---|
| **Laboratory Name :** | SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES & TECHNOLOGY, BIOMEDICAL TECHNOLOGY WING, SATELMOND PALACE CAMPUS, POOJAPPURA, THIRUVANANTHAPURAM, KERALA, INDIA |
| **Accreditation Standard** | ISO/IEC 17025:2017 |

| S.No | Discipline / Group | Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument | Calibration or Measurement Method or procedure | Measurement range and additional parameters where applicable(Range and Frequency) | * Calibration and Measurement Capability(CMC)(±) |
|---|---|---|---|---|---|
| | | | Permanent Facility | | |
| 1 | MECHANICAL-VOLUME | Burette, Pipette, Measuring Cylinder, Standard Flask | Using Weighing Balance of Readability: 0.1 mg and Distilled Water as per ISO 4787 : 2021 | > 10 ml to 20 ml | 15 µl |
| 2 | MECHANICAL-VOLUME | Burette, Pipette, Measuring Cylinder, Standard Flask | Using Weighing Balance of Readability: 0.1 mg and Distilled Water as per ISO 4787 : 2021 | > 20 ml to 100 ml | 21 µl |
| 3 | MECHANICAL-VOLUME | Burette, Pipette, Measuring Cylinder, Standard Flask | Using Weighing Balance of Readability: 0.1 mg and Distilled Water as per ISO 4787 : 2021 | 1 ml to 10 ml | 5.78 µl |
| 4 | MECHANICAL-VOLUME | Burette, Pipettes, Measuring Cylinder, Standard Flask | Using Weighing Balance of Readability: 0.1 mg and Distilled Water as per ISO 4787 : 2021 | > 100 ml to 500 ml | 0.2 ml |
| 5 | MECHANICAL-VOLUME | Micropipette | Using Weighing Balance of Readability: 0.01 mg and Distilled Water by Gravimetric Method based on ISO 8655 : 2022 | > 1 ml to 5 ml | 2.89 µl |

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**Certificate Number** CC-2574 | **Page No** 2 of 10

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|------|--------------------|-------|-------|-------|-------|
| 6 | MECHANICAL-VOLUME | Micropipette | Using Weighing Balance of Readability: 0.01 mg and Distilled Water by Gravimetric Method based on ISO 8655 : 2022 | > 100 µl to 200 µl | 0.27 µl |
| 7 | MECHANICAL-VOLUME | Micropipette | Using Weighing Balance of Readability: 0.01 mg and Distilled Water by Gravimetric Method based on ISO 8655 : 2022 | > 200 µl to 1000 µl | 1.44 µl |
| 8 | MECHANICAL-VOLUME | Micropipette | Using Weighing Balance of Readability: 0.01 mg and Distilled Water by Gravimetric Method based on ISO 8655 : 2022 | 20 µl to 100 µl | 0.23 µl |
| 9 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 1 g | 0.07 mg |

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|---|---|---|---|---|---|
| 10 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 g) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 1 kg | 13.5 mg |
| 11 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 1 mg | 0.06 mg |
| 12 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 10 g | 0.07 mg |
| 13 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 10 mg | 0.06 mg |

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|---|---|---|---|---|---|
| 14 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 100 g | 0.09 mg |
| 15 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 100 mg | 0.06 mg |
| 16 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 2 g | 0.07 mg |
| 17 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 g) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 2 kg | 14.5 mg |

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|---|---|---|---|---|---|
| 18 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 2 mg | 0.06 mg |
| 19 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 20 g | 0.07 mg |
| 20 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 20 mg | 0.06 mg |
| 21 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 200 g | 0.29 mg |

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|---|---|---|---|---|---|
| 22 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 200 mg | 0.06 mg |
| 23 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 5 g | 0.07 mg |
| 24 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 5 mg | 0.06 mg |
| 25 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 50 g | 0.12 mg |

*This is annexure to 'Certificate of Accreditation' and does not require any signature.*

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|---|---|---|---|---|---|
| 26 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 50 mg | 0.06 mg |
| 27 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.1 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 500 g | 8 mg |
| 28 | MECHANICAL-WEIGHTS | Accuracy Class M1 & Coarser | Using E2 Class Standard Weights and Weighing Balance (Readability: 0.01 mg) by Substitution Method (ABA Cycle) as per OIML R 111 - 1 | 500 mg | 0.06 mg |
| 29 | THERMAL-SPECIFIC HEAT & HUMIDITY | RH Meter, Thermo Hygrometer | Using Thermo Hygrometer and Salt Bath by Comparison Method | 45 % rh @ 25 °C | 2 % rh |
| 30 | THERMAL-SPECIFIC HEAT & HUMIDITY | RH Meter, Thermo Hygrometer | Using Thermo Hygrometer and Salt Bath by Comparison Method | 53 % rh @ 25 °C | 2 % rh |

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| 31 | THERMAL-SPECIFIC HEAT & HUMIDITY | RH Meter, Thermo Hygrometer | Using Thermo Hygrometer and Salt Bath by Comparison Method | 75 % rh @ 25 °C | 2 % rh |
| 32 | THERMAL-SPECIFIC HEAT & HUMIDITY | RH Meter, Thermo Hygrometer | Using Thermo Hygrometer and Salt Bath by Comparison Method | 83 % rh @ 25 °C | 2 % rh |
| 33 | THERMAL-TEMPERATURE | Liquid in Glass Thermometer | Using Secondary Precision Resistance Thermometer with Indicator and Liquid Bath by Comparison Method | (-) 20 °C to 200 °C | 0.58 °C |
| 34 | THERMAL-TEMPERATURE | Thermocouple / RTD with Indicator, Thermistor with Indicator, Temperature Gauge | Using SPRT with Indicator and Liquid Bath by Comparison Method | (-) 20 °C to 200 °C | 0.3 °C |

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|---|---|---|---|---|---|
| | | | Site Facility | | |
| 1 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance, Accuracy Class - I, Readability 0.01 mg & Coarser | Using E1 Class Standard Weights by Comparison Method as per OIML R 76 - 1 | 1 mg to 100 g | 0.15 mg |
| 2 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance, Accuracy Class - I, Readability 0.1 mg & Coarser | Using E1 Class Standard Weights by Comparison Method as per OIML R 76 - 1 | 1 mg to 500 g | 1.5 mg |
| 3 | MECHANICAL-WEIGHING SCALE AND BALANCE | Weighing Balance, Accuracy Class - II, Readability 1 mg & Coarser | Using E2 Class Standard Weights by Comparison Method as per OIML R 76 - 1 | 1 g to 2000 g | 25 mg |
| 4 | THERMAL-TEMPERATURE | Liquid in Glass Thermometer | Using Secondary Precision Resistance Thermometer with Indicator and Liquid Bath by Comparison Method | (-) 20 °C to 200 °C | 0.58 °C |
| 5 | THERMAL-TEMPERATURE | Oven, Bath - Multi Position Calibration | Using Data Acquisition System with RTD Sensor (minimum 9 sensors) by Comparison Method | (-) 20 °C to 200 °C | 2 °C |
| 6 | THERMAL-TEMPERATURE | Temperature Indicator with Sensor of Oven, Bath - Single Position Calibration | Using RTD Sensor with Data Acquisition system by Comparison Method | (-) 20 °C to 200 °C | 2 °C |
| 7 | THERMAL-TEMPERATURE | Thermocouple / RTD with Indicator, Thermistor with Indicator, Temperature Gauge | Using SPRT with Indicator and Liquid Bath by Comparison Method | (-) 20 °C to 200 °C | 0.3 °C |

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* CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.