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Accreditation No: LAB 002

Awarded to

PCSIR LABORATORIES COMPLEX, KARACHI, PAKISTAN

The scope of accreditation is in accordance with the standard specifications outlined in the following page(s) of this document. The accredited scope shall be visible and legible in areas such as customer service, sample-receiving section etc and shall not mislead its users.

The accreditation was first time granted on **30-01-2004** by Pakistan National Accreditation Council.

The laboratory complies with the requirements of **ISO/IEC 17025:2017**

The accreditation requires regular surveillance, and is valid until **01-10-2021**.

The decision of accreditation made by Pakistan National Accreditation Council implies that the organization has been found to fulfill the requirements for accreditation within the scope.

The organization however, itself is responsible for the results of performed measurements/tests.

PAKISTAN NATIONAL ACCREDITATION COUNCIL

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Director General

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Testing Laboratory.

Accreditation Scope of PCSIR laboratories complex, Shahrah Dr. Saleem-uz-Zaman Road, off University Road, Karachi-75280, Pakistan

Permanent laboratory premises

Laboratory Name: **Chemical-Environment**

Materials /Products tested	Testing field(e.g. environmental testing or mechanical testing)	Types of test/properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/Internal method reference
Food (All Commodities)	Food Testing	Lead	AOAC Official Method 21 st Ed (2019)
		Cadmium	
		Zinc	
		Copper	
		Iron	AOAC Official Method 21 st Ed (2019)
		Arsenic	
		Selenium	
Food	Environmental Testing	Manganese	AAS/ETAAS AOAC Official Method 21 st Ed (2019)
Food	Environmental Testing	Chromium	AAS/ETAAS AOAC Official Method 21 st Ed (2019)
Food	Environmental Testing	Aluminium	AAS, Flame AOAC Official Method 21 st Ed (2019)
Food	Environmental Testing	Tin	AAS, Flame AOAC Official Method 21 st Ed (2019)
Drinking water	Environmental Testing	Electrical Conductance	Standard Method for the Examination of Water and Waste Water 20 th Edition, American Public Health Association, 1998
Drinking water	Environmental Testing	Total Dissolved Solids	
Drinking water	Environmental Testing	Hardness	
Drinking water	Environmental Testing	Alkalinity	
Municipal Wastewater/ Industrial Liquid Effluent	Environmental Testing	Chemical Oxygen Demand	5220-B: Standard Methods for the Examination of Water and Wastewater 23 rd Edition, 2017

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Materials /Products tested	Testing field(e.g. environmental testing or mechanical testing)	Types of test/properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/Internal method reference
Municipal Wastewater/ Industrial Liquid Effluent	Environmental Testing	Biological Oxygen Demand	5210-B: Standard Methods for the Examination of Water and Wastewater 23 rd Edition,2017
Municipal Wastewater/ Industrial Liquid Effluent	Environmental Testing	pH	4500-H-B:Standard Methods for the Examination of Water and Wastewater 23 rd Edition,2017
Metal testing in Food	Environmental Testing	Calcium	AOAC Official Method 21 st Ed (2019) Spectroscopy Atomic Absorption Spectrometer (FAAS)
Food	Environmental testing	Pesticide residue: 1. Tecnazene 2. HCB 3. Quintozene 4. BHC-Alpha 5. BHC-beta 6. BHC-gama 7. Heptachlor 8. Aldrin 9. Heptachlor exo-epoxide 10. Heptachlor endo-epoxide 11. Transchlordan 12. cis-chlordane 13. Dieldrin 14. Alpha endosulfan 15. Beta endosulfan 16. Endrin 17. Endrin Aldehyde 18. DDE (o,p-DDE + p,p-DDE) 19. DDD (o,p-DDD + p,p-DDD)	AOAC Official Method 2007.01 Pesticide Residues in Foods by Acetonitrile Extraction and Partitioning with Magnesium Sulfate (AOAC 2019).

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Materials /Products tested	Testing field(e.g. environmental testing or mechanical testing)	Types of test/properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/Internal method reference
		20. Endosulfan sulfate 21. DDT (o,p-DDT + p,p-DDT) 22. Methoxychlor 23. Bifenthrin 24. Fipronil 25. Lambda cyhalothrin 26. Trifloxystrobin 27. Chlorpyrifos 28. Difenconazole 29. Tebuconazole 30. Cypermethrin 31. Permethrin 32. Deltamethrin 33. Chlorpyrifos-methyl 34. Diazinon 35. Melathion 36. Dichlorvos 37. Primiphos-methyl 38. Fenitrothion 39. Methamidophos	
Food	Environmental testing	1. Tecnazene 2. HCB 3. Quintozene 4. BHC-Alpha 5. BHC-beta 6. BHC-gama 7. Heptachlor 8. Aldrin 9. Heptachlor exo-epoxide 10. Heptachlor endo-epoxide 11. Transchlordan 12. cis-chlordan 13. Dieldrin 14. Alpha endosulfan	AOAC Official Methods 970.52. Organochlorine and organophosphorus pesticide residues (AOAC 2019)

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Materials /Products tested	Testing field(e.g. environmental testing or mechanical testing)	Types of test/properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/Internal method reference
		15. Beta endosulfan 16. Endrin 17. Endrin Aldehyde 18. DDE (o,p-DDE + p,p-DDE) 19. DDD (o,p-DDD + p,p-DDD) 20. Endosulfan sulfate 21. DDT (o,p-DDT + p,p-DDT) 22. Methoxychlor 23. Bifenthrin 24. Fipronil 25. Lambda cyhalothrin 26. Trifloxystrobin 27. Chlorpyrifos 28. Difenconazole 29. Tebuconazole 30. Cypermethrin 31. Permethrin 32. Deltamethrin 33. Chlorpyrifos-methyl 34. Diazinon 35. Melathion 36. Dichlorvos 37. Primiphos-methyl 38. Fenitrothion 39. Methamidophos	
Agriculture products	Environmental testing	Pesticide residues: 1. Bifenthrin 2. Cypermethrin 3. Permethrin 4. Deltamethrin 5. Fenpropathrin 6. Fenvelerate	AOAC official method 998.01, Synthetic Pyrethroids in Agriculture products. (AOAC 2019).
Fish	Environmental Testing	PAH as Naphthalene,	Gas Chromatography (Validated) Pena, A.,Morales, J., et al. (2003)

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Materials /Products tested	Testing field(e.g. environmental testing or mechanical testing)	Types of test/properties measured	Reference to standardized method (e.g. ISO 14577-1:2003)/Internal method reference
		Acenaphthylen, Acenaphthene, Fluorene, Phenanthrene	Optimization of clean-up procedures by column chromatography and solid phase extraction for the PAH determination by GC: Application to fish. Revistar International de Contamination Ambiental, 19(12). 13-23.
Fish	Environmental Testing	PCBs: 1. PCB-28 2. PCB-52 3. PCB-101 4. PCB-138 5. PCB-153 6. PCB-180	Gas Chromatography EPA-1668-Revision-A for PCBs in Fisheries
Fish	Environmental Testing	Dibenzo dioxin	Gas Chromatography Modified EPA- 8290

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Laboratory Name: **Textile**

Materials/ Products Tested	Testing Field (e.g. Environmental Testing or Mechanical Testing)	Types of Test/ Properties Measured	Reference to Standardized Method (e. g. ISO-14577-1: 2003)/ Internal Method Reference
Fabric	Textile	Colour fastness to water	ISO 105 EO1
Fabric	Textile	Colour fastness to sea water	ISO 105 EO2
Fabric	Textile	Colour Fastness to Rubbing organic solvent	ISO 105 DO2
Fabric	Textile	Angle of Crease Wrinkle Recovery Tester	AATCC 66–2003
Fabric	Textile	Tear Strength	ISO-13937-2
Fabric	Textile	Blend Ratio (Polyester / Cotton)	ISO1833, Section 10 (Mixture of Cellulose & polyester)
Fabric	Textile	Ends & Picks	ISO-7211-2
Fabric	Textile	Abrasion (Martindale)	ISO-12947-2
Fabric	Textile	Spray Rating	AATCC-22
Fabric	Textile	Count of yarn	ISO-7211-5
Fabric	Textile	Tensile Strength	ISO-13934-1
Fabric	Textile	Weight of fabric	ISO-3801

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Laboratory Name: **Chemical-Pharmaceutical**

Materials/ Products Tested	Testing Field (e.g. Environmental Testing or Mechanical Testing)	Types of Test/ Properties Measured	Reference to Standardized Method (e. g. ISO-14577-1: 2003)/ Internal Method Reference
Edible Oil and Products Containing Edible Oil	Food	Erucic Acid	Validated self developed method KL/PRC/Erucic Acid/03 Gas Chromatograph
Spices & Food containing Spices	Food & Spices	Sudan I, II, III and IV	AOAC, 920.208B (2012) UV Visible Spectrophotometer TLC
Canned food, Pickles & dates	Food	Water Activity	AOAC 978.18 (2012) Hygrometer
Non Sterile pharmaceutical Product	Pharmaceutical	Water activity	USP 1112
Chilli Powders and Products Containing Chilli Powders (such as Chilli Powder, Chilli Whole, Chilli Crushed, Chilli Sauces, Chilli Paste, Chilli Oleoresins, Pickles and Food Colors)	Food & Spices	Para red	HPLC J.Chem.Soc.Pak., 31(1), 151-155, 2009

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Laboratory Name: **Food Technology and Nutrition Laboratory**

Materials/ Products Tested	Testing Field (e.g. Environmental Testing or Mechanical Testing)	Types of Test/ Properties Measured	Reference to Standardized Method (e. g. ISO-14577-1: 2003)/ Internal Method Reference
Cereal foods	Food testing	Moisture	AOAC 21 st edition (2019) Method No. 925.10 (32.1.03)
Cereal foods	Food testing	Protein	AOAC 21 st edition (2019) Method No. 920.87 (32.1.22)
Cereal foods	Food testing	Fat	AOAC 21 st edition (2019) Method No. 920.39 (4.5.01)
Cereal foods	Food testing	Ash	AOAC 21 st edition (2019) Method No. 923.03 (32.1.05)
Cereal foods	Food testing	Carbohydrates(by difference)/ Nitrogen Free Extract (NFE)	By difference/nitrogen free extract Modern food Analysis by Hart & fisher 1971
Cereal foods	Food testing	Calorific value/ Energy value	By calculation MacCane & Widdowson's The composition of Food by Paul & Southgate 4 th ed.1988
Cereal foods	Food testing	Fat	Acid Hydrolysis method AOAC 21 st edition (2019) Method No. 922.06 (32.1.14)
Cereal foods	Food testing	Vitamin C	AOAC 21 st edition (2019) Method No. 967.21 (45.1.14)
Raw/ Processed Food	Food testing	Vitamin A	Pearson's Composition & analysis of Food 9th edition, page 646 Food analysis, by S.Suzanne Neilsen., 4th edition, page 188 The Essential Chromatography and Spectroscopy Catalog. (Agilent Technologies) 2007-2008 edition page 656
Raw/ Processed Food	Food testing	Vitamin C	ASEAN Manual of Food Analysis, 2011. Regional Centre of ASEAN Network of Food Data System, Thailand pp.141-144

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Laboratory Name: **Food & Feed Safety**

Materials/ Products Tested	Testing Field (e.g. Environmenta l Testing or Mechanical Testing)	Types of Test/ Properties Measured	Reference to Standardized Method (e. g. ISO-14577-1: 2003)/ Internal Method Reference
Food & Feed Commodities 1. Rice & Rice Protein 2. Wheat 3. Maize or Corn 4. Red Chili (Spices) 5. Guar gum 6. Sesame seed 7. Black and Green Tea 8. Dates 9. Dried Fruits and Edible Nuts 10. Lentils and Pulses 11. Licorice roots (Herbs) 12. Animal Feed (Cattle & Poultry Feed & their ingredients)	Food and Feed Safety; Mycotoxins	Determination of Aflatoxins B ₁	Official Methods of Analysis of AOAC International, 21 st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 975.36 (49.2.05), 968.22 (49.2.08), 970.43 (49.1.01), 999.07 (49.2.29), 971.22 (49.2.03), 970.44 (49.2.02).
Food & Feed Commodities 1. Rice & Rice Protein 2. Wheat 3. Maize or Corn 4. Red Chili (Spices) 5. Guar gum 6. Sesame seed 7. Black and Green Tea 8. Dates 9. Dried Fruits and Edible Nuts 10. Lentils and Pulses 11. Licorice roots (Herbs) 12. Animal Feed (Cattle & Poultry Feed & their ingredients)	Food and Feed Safety; Mycotoxins	Determination of Aflatoxins B ₂	Official Methods of Analysis of AOAC International, 21 st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 975.36 (49.2.05), 968.22 (49.2.08), 970.43 (49.1.01), 999.07 (49.2.29), 971.22 (49.2.03), 970.44 (49.2.02).

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<p>Food & Feed Commodities</p> <ol style="list-style-type: none"> 1. Rice & Rice Protein 2. Wheat 3. Maize or Corn 4. Red Chili (Spices) 5. Guar gum 6. Sesame seed 7. Black and Green Tea 8. Dates 9. Dried Fruits and Edible Nuts 10. Lentils and Pulses 11. Licorice Roots (Herbs) 12. Animal Feed (Cattle & Poultry Feed & their ingredients) 	<p align="center">Food and Feed Safety; Mycotoxins</p>	<p align="center">Determination of Aflatoxins G₁</p>	<p>Official Methods of Analysis of AOAC International, 21st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 975.36 (49.2.05), 968.22 (49.2.08), 970.43 (49.1.01), 999.07 (49.2.29), 971.22 (49.2.03), 970.44 (49.2.02).</p>
<p>Food & Feed Commodities</p> <ol style="list-style-type: none"> 1. Rice & Rice Protein 2. Wheat 3. Maize or Corn 4. Red Chili (Spices) 5. Guar gum 6. Sesame seed 7. Black and Green Tea 8. Dates 9. Dried Fruits and Edible Nuts 10. Lentils and Pulses 11. Licorice Roots (Herbs) 12. Animal Feed (Cattle & Poultry Feed & their ingredients) 	<p align="center">Food and Feed Safety; Mycotoxins</p>	<p align="center">Determination of Aflatoxins G₂</p>	<p>Official Methods of Analysis of AOAC International, 21st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 975.36 (49.2.05), 968.22 (49.2.08), 970.43 (49.1.01), 999.07 (49.2.29), 971.22 (49.2.03), 970.44 (49.2.02).</p>

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<p>Food & Feed Commodities</p> <ol style="list-style-type: none"> 1. Rice & Rice Protein 2. Wheat 3. Maize or Corn 4. Red Chili (Spices) 5. Guar gum 6. Sesame seed 7. Black and Green Tea 8. Dates 9. Dried Fruits and Edible Nuts 10. Lentils and Pulses 11. Licorice roots (Herbs) 12. Animal Feed (Cattle & Poultry Feed & their ingredients) 	<p align="center">Food and Feed Safety; Mycotoxins</p>	<p align="center">Determination of Total Aflatoxins</p>	<p>Official Methods of Analysis of AOAC International, 21st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 975.36 (49.2.05), 968.22 (49.2.08), 970.43 (49.1.01), 999.07 (49.2.29), 971.22 (49.2.03), 970.44 (49.2.02).</p>
<p>Milk and Dairy Products</p> <ol style="list-style-type: none"> 1. Liquid & Dried Milk 2. Butter 3. Cheese 	<p align="center">Food and Feed Safety; Mycotoxins</p>	<p align="center">Determination of Aflatoxin M₁</p>	<p>Official Methods of Analysis of AOAC International, 21st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 980.21 (49.3.02), 974.17 (49.3.01), 970.43 (49.1.01), 978.15 (49.2.21), 970.44 (49.2.02), 968.22 (49.2.08).</p>
<p>Food & Feed Commodities</p> <ol style="list-style-type: none"> 1. Rice 2. Wheat 3. Maize or Corn 4. Raisins 5. Licorice roots 6. Animal Feed (Cattle & Poultry Feed etc.) 	<p align="center">Food and Feed Safety; Mycotoxins</p>	<p align="center">Determination of Ochratoxin 'A'</p>	<p>Official Methods of Analysis of AOAC International, 21st Edition (2019) Chapter # 49, AOAC Official Method (Adapted) # 973.37 (49.6.01).</p>

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Laboratory Name: **Microbiology**

Materials/ Products Tested	Testing Field (e.g. Environmental Testing or Mechanical Testing)	Types of Test/ Properties Measured	Reference to Standardized Method (e. g. ISO-14577-1: 2003)/ Internal Method Reference
Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry, Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.	Food Microbiology	Aerobic Plate Count	Bacteriological Analytical Manual, Online USFDA, Chapter # 03 (January 2001), (By Pour Plate method)
Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry, Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.	Food Microbiology	Total Coliforms	Bacteriological Analytical Manual, Online USFDA, Chapter # 04 (Oct, 2020), (By MPN Multiple tube method)
Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry, Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.	Food Microbiology	Faecal Coliforms	Bacteriological Analytical Manual, Online USFDA, Chapter # 04 (Oct, 2020), (MPN Multiple tube method)

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<p>Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry, Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.</p>	<p align="center">Food Microbiology</p>	<p align="center">Mould & Yeast Count</p>	<p>Bacteriological Analytical Manual, Online USFDA, Chapter # 18 (April 2001), (Spread plate/pour plate method)</p>
<p>Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry, Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.</p>	<p align="center">Food Microbiology</p>	<p align="center"><i>Salmonella</i> Detection</p>	<p>Bacteriological Analytical Manual, Online USFDA, Chapter # 05 (Feb 2021), (Selective enrichment method)</p>
<p>Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry, Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.</p>	<p align="center">Food Microbiology</p>	<p align="center"><i>Staphylococcus aureus</i> Enumeration</p>	<p>Bacteriological Analytical Manual, Online USFDA, Chapter # 12 (March 2016), (Spread plate method)</p>
<p>Food 1. Milk & Milk products. 2. Cereal and Cereal based foods. 3. Meat, Fish, Poultry,</p>	<p align="center">Food Microbiology</p>	<p align="center"><i>E.coli</i> in food</p>	<p>Bacteriological Analytical Manual, Online USFDA, Chapter # 04 (Oct, 2020), (MPN Multiple tube method)</p>

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Eggs and their products. 4. Vegetables, spices, herb & their products. 5. Fruits & Fruit products. 6. Confectionary items. 7. Guar gum, guar splits.			
Drinking Water	Water Microbiology	Heterotrophic Plate Count	Standard Method for the examination of water & wastewater, 23 rd Edition 2017, (Pour plate method).
Drinking Water	Water Microbiology	Total Coliforms Count	-ISO-9308-1, Part 1: Membrane filtration Method 2014, (Membrane filtration Method) -ISO-9308-2, Part 2: Multiple Tube Method 1 st Edition, 1990, (MPN Multiple tube method) -ISO-9308-2, Part 2: Multiple Tube Method 2 nd Edition, 2012, (IDEXX)
Drinking Water	Water Microbiology	Faecal Coliforms Count	-ISO-9308-1, Part 1: Membrane filtration Method 2014, (Membrane filtration Method) -ISO-9308-2, Part 2: Multiple Tube Method 1 st Edition, 1990, (MPN Multiple tube method)
Drinking Water	Water Microbiology	<i>E. coli</i> in Water	-ISO-9308-1, Part 1: Membrane filtration Method 2014, (Membrane filtration Method) -ISO-9308-2, Part 2: Multiple Tube Method 1 st Edition, 1990, (MPN Multiple tube method) -ISO-9308-2, Part 2: Multiple Tube Method 2 nd Edition, 2012, (IDEXX)

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Calibration Laboratory.

Permanent laboratory premises

Field of measurement:			
Measured quantity	Range	*Expanded Uncertainty (±)	Technique, Reference Standard, Equipment
Weighing Scales ** Weighing Instruments Class I and Below Accuracy Classes	2.0 mg to 220 g	0.00020 g	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses(Equivalent To F1 Class Masses) OIML R76
	2.0 mg to 610 g	0.0050 g	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses(Equivalent To F1 Class Masses) OIML R76
	2.0 mg to 6.1 kg	0.0055 g	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses(Equivalent To F1 Class Masses) OIML R76
	100 mg to 20 kg	0.25 g	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses(Equivalent To F1 Class Masses) OIML R76
Masses/Weights F1 Class and Below Accuracy Classes	10 mg to 200 g	0.010 mg-200.00 mg	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses(Equivalent To F1 Class Masses) and Analytical Balance, Mettler Toledo AX 205 OIML R111
	500 g to 5 kg	1.00 mg-300.00 mg	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses (Equivalent To F1 Class Masses) and Mass Comparator, Mettler Toledo XP 5003, OIML R111
	10 kg to 20 kg	2.00 mg-5000.00 mg	Ultra Class Masses (Equivalent To E2 Class Masses), ASTM 1 Class Masses(Equivalent To F1

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			Class Masses)Mass Comparator Mettler Toledo KA 30-3/P and Top Loading Balance, AND GP- 40K, OIML R111
Liquid in Glass Thermometer	0 °C to 200 °C 300°C to 400 °C	0.20 °C 0.30 °C	Digital Thermometer DIGI Sense Temperature Controller, with (K Type Temperature Probe) and Dry Block Calibrators TECHNE KL/MSRC/Cal/T-01, KL/MSRC/Cal-M/T-01
Dial gauge Thermometer (**)	0 °C to 200 °C 300°C to 400 °C	0.20 °C 0.30 °C	Digital Thermometer, DIGI Sense Temperature Controller with (K Type Temperature Probe) and Dry Block Calibrators TECHNE KL/MSRC/Cal/T-01, KL/MSRC/Cal-M/T-01
Oven (**)	50 °C to 200 °C	0.20 °C	Digital Thermometer, DIGI Sense Temperature Controller with (K Type Temperature Probe) KL/MSRC/Cal-M/T-01
Dry Block Calibrator	50 °C to 200 °C 300°C to 400 °C 400°C to 500 °C	0.20 °C 0.30 °C 1.60 °C	Digital Thermometer, DIGI Sense Temperature Controller with (K Type Temperature Probe) KL/MSRC/Cal-M/T-03
Digital Thermometer with T/K Type thermocouple	0 °C to 200 °C 300°C to 400 °C 400°C to 700 °C 800°C to 1000 °C	0.20 °C 0.30 °C 1.60 °C 2.00 °C	Digital Thermometer, DIGI Sense Temperature Controller with (K Type Temperature Probe) and Dry Block Calibrators TECHNE KL/MSRC/Cal/T-01 KL/MSRC/Cal-M/T-03

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Measured quantity	Range	*Expanded Uncertainty (±)	Technique, Reference Standard, Equipment
Furnace (**)	50°C to 200 °C 300°C to 400 °C 400°C to 700 °C 800°C to 1000 °C	0.20 °C 0.30 °C 1.60 °C 2.00 °C	Digital Thermometer, DIGI Sense Temperature Controller with (K Type Temperature Probe) KL/MSRC/Cal-M/T-01
Temperature indicators (**) (Dryer/ Lander-o meter, hygrometer, refrigerator, bath)	0 °C to 100 °C	0.20 °C	Digital Thermometer, DIGI Sense Temperature Controller with (K Type Temperature Probe) and Dry Block Calibrators TECHNE KL/MSRC/Cal/T-01
Length Micro meter (external), Calliper, Dial Indicator measuring scale, measuring tape, templates, length interval marked on equipment)	0.01 mm to 100 mm 0.01 mm to 300 mm 0.01 mm to 25mm 0.01 mm to 1000 mm	0.16 µm – 10 µm 0.16 µm – 50 µm 0.001 mm 0.02 – 0.30 mm	Gauge Block Set Grade 0 and 1 JISB 7502 micrometer Gauge Block Set Grade 0 and 1 JISB 7507 Calipers Dial Indicator Calibrator JISB 7503 Dial Indicator Length comparator 0.1 µm Digital Caliper 300 and 600mm R35-1 Measures of length for general use
Pressure Gauges Transmitters and Recorders	100 psi to 5000 psi (Hydraulic)	0.010 % - 0.030 % of reading 0.025 of full scale deflection	Dead weight Tester Pressure Calibrator DKD-R6-1, OIML R-110(Guide for the uncertainty analysis in Pressure when using Deadweight Tester 2170TN13

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Director



ACCREDITATION DOCUMENT

F-06/02
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LAB 002

Pressure Gauges Transmitters and recorders	100 psi to 2000 psi (Pneumatic)	0.025 to 0.050% (of full scale deflection)	Pressure Calibrator DKD-R6-1
RPM (**) (Source & measurement)	50 rpm-40000 rpm	1.00 rpm to 10.00 rpm	Tachometer Model:TM-5010 Signal Generator with Photo tachometer Calibrator Circuit Model: DD-S271 Fluke KL/MSRC/CAL-M/TF-02
Pipette	1 mL to 50 mL	0.20 mL	Analytical Balance Model: GX 6100 Analytical balance Model: ME-414 ASTM E542
Burette	1 mL to 100 mL	0.20 mL	
Measuring Cylinder	5 mL to 2000 mL	0.20 mL	
Measuring Brakers	25mL to 1000mL	0.20 mL	
Volumetric Flask	10 mL to 2000 mL	0.20 mL	
Phycnometer	10mL /25mL/50mL	0.20 mL	
Density Bottle	50mL/250mL	0.20 mL	

*** Expanded Uncertainty:**

Expanded Uncertainty is the measurement uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. This measurement uncertainty is a value for which the laboratory has been accredited using the procedure that was the subject of assessment. In certificates issued under its accreditation scope an accredited laboratory is not permitted to quote an uncertainty that is smaller than the published uncertainty for respective ranges as given above.

** On Site Accreditation (as well)

31-05-2021

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