

R&D LAB

INNOVATE • TEST • CERTIFY • EXCEL

KIYO R&D Center & Laboratory is a state-of-the-art facility dedicated to research, development and precision testing with world-class infrastructure and NABL accredited quality assurance.



ADVANCED TECHNOLOGY

Equipped with advanced instruments for accurate and reliable results.



EXPERT TEAM

Experienced and skilled professionals ensuring excellence in every process.



QUALITY ASSURANCE

Compliant with national & international standards.



INNOVATION FOCUSED

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WE DELIVER

- ✓ Accurate & Reliable Results
- ✓ Quick Turnaround Time
- ✓ Confidential & Secure Testing
- ✓ Customized Solutions
- ✓ Industry & Research Support



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RICH EXPERIENCE



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R&D Center & Laboratory

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OUR TESTING & RESEARCH SERVICES



MATERIAL
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ELECTRICAL
TESTING



MECHANICAL
TESTING



ENVIRONMENTAL
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CALIBRATION
SERVICES



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Materials, Automotive &
Medical Testing

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INNOVATIVE SOLUTIONS.**

OUR BRANCHES



KIYO R&D CENTER AND LABORATORY

**Materials, Plastic,
Rubber, Metals Testing**

Address:

2/7A, Haridasspuram Main
Rd, Vivek Nagar,
Chitlapakkam, Chennai,
Tamil Nadu - 600064.



KIYO R&D CENTER AND LABORATORY

**Innovation Center -
Automotive Parts &
Medical Device Testing**

Address:

No13, Srinivasa Perumal
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National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

KIYO R&D CENTER AND LABORATORY LLP

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

27/A, HARIDASSPURAM MAIN ROAD, VIVEK NAGAR, CHITLAPAKKAM, CHENNAI, KANCHIPURAM,
TAMIL NADU, INDIA

in the field of

TESTING

Certificate Number: TC-17917

Issue Date: 22/04/2026

Valid Until: 21/04/2030

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: KIYO R&D CENTER AND LABORATORY LLP

Signed for and on behalf of NABL



Srikanth R
Director

Dr. Ramanand N. Shukla
Chief Executive Officer

— OUR TESTING SERVICES —



**AUTOMOTIVE
TESTING**



**PLASTIC
TESTING**



**RUBBER
TESTING**



**MEDICAL
DEVICE
TESTING**



KIYO

R&D CENTER & LABORATORY

Advanced Testing Solutions

- ✓ NABL ACCREDITED
- ✓ Accurate Results
- ✓ Industrial Expertise



**COMPOSITE
TESTING**



**FOAM
TESTING**



**FABRIC
TESTING**



**FILM
TESTING**



Plastic Testing

Plastic testing evaluates the mechanical, thermal, chemical, and physical properties of plastic materials to ensure quality, durability, safety, and performance for industrial applications.

I - Mechanical Testing

- Density & Specific Gravity
- Hardness Durometer
- Rockwell Hardness
- Tensile & Elongation Properties
- Flexural Strength & Flexural Modulus
- Compressive Strength & Compressive Modulus
- Izod & Charpy Impact Strength
- Heat Deflection Temp / Vicat Softening Point
- Melt Flow Rate / Melt Flow Index
- Melting Temperature / Melting Range
- Abrasion Resistance / Wear Resistance

II .Low Temperature Brittleness Properties

- Heat Ageing: Change in Properties
- Flammability / Rate of Burning

III - Optical Testing

- Colour Fastness
- Colour and Yellowness Index
- Gloss
- Gray Scale
- Haze & Total Transmittance

IV - Material Testing

- Biodegradability
- Fogging Value
- Weatherability Test (UV/Xenon)

V - Analytical Testing

- Fourier Transform Infrared Spectroscopy (FTIR)
- Compositional Analysis by Thermogravimetry (TGA)
- Differential Scanning Calorimetry (DSC)
- Moisture Content by Karl Fisher
- Carbon Black Content in Olefin Plastics

VI - Chemical Testing

- Water Absorption
- Chemical Resistance
- Odour test

VII - Electrical Testing

- Volume Resistivity & Surface Resistivity
- Dielectric Constant & Dissipation Factor
- Dielectric Strength



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Rubber Testing

Rubber testing evaluates the strength, hardness, durability, and quality of rubber materials for industrial and commercial applications.

I - Mechanical Testing

- Hardness Durometer / IRHD
- Density
- Tensile & Elongation Properties
- Tension Set / Compression Set
- Tear Strength
- Compression Set at Low Temperature
- Compression Force & Compression Modulus
- Compression Stress Relaxation & Force Retention
- Rebound Resilience Vertical
- Abrasion Resistance (Rotary Drum Abrader)
- Flex crack growth by DeMattia Flex
- Paint and Surface Staining
- Adhesion - Two Plate Method
- Adhesion to Rigid Substrates / Two Plate Method

II - Thermal Testing

- Accelerated Ageing: Change in Properties
- Heat Ageing: Change in Properties
- Low Temperature Brittleness Point / Impact
- Low Temperature Retraction (TR Test)
- Flammability

III - Material Testing

- Colour Difference
- Fogging Value
- Ozone Resistance (Static / Dynamic / Outdoor)
- Weatherability Test (Fluorescent UV/Xenon)

IV - Fourier Transform Infrared Spectroscopy (FTIR)

- Thermogravimetry (TGA)
- Differential Scanning Calorimetry (DSC)

V - Chemical Testing

- Chemical Analysis of Rubber and compounding ingredients
- Effect of Liquids
- Oil / Fluid Resistance
- Chemical Resistance of Rubber
- Corrosion Resistance on Copper
- Electrochemical tests
- Odor Test

VI - Electrical Testing

- Volume Resistivity & Surface Resistivity
- Dielectric Constant & Dissipation Factor
- Dielectric Strength



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Composites Testing

Composite testing evaluates the mechanical, thermal, and physical properties of composite materials to ensure strength, durability, performance, and quality for industrial applications.

I - Mechanical Testing

- Density & Specific Gravity
- Hardness Durometer
- Rockwell Hardness
- Tensile & Elongation Properties
- Compressive Strength & Modulus
- Flexural Strength & Modulus
- Izod & Charpy Impact Strength
- Short Beam Strength
- Shear Properties / In-Plane Shear Properties
- Lap shear strength of FRP
- Interlaminar Fracture Toughness
- Adhesion strength to Plastics / Metal
- Heat Deflection Temperature / Vicat Softening Point

II - Thermal Testing

- Flame Resistance and Burning Rate

III - Analytical Testing

- Fourier Transform Infrared Spectroscopy (FTIR)
- Compositional Analysis by Thermogravimetry (TGA)
- Differential Scanning Calorimetry (DSC)

IV - Chemical Testing

- Ash Content
- Ignition Loss
- Water Absorption
- Content Analysis
- Fiber volume fraction

V - Electrical Testing

- Volume Resistivity and Surface Resistivity
- Dielectric Constant & Dissipation Factor
- Dielectric Strength



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Industrial Fabrics

Industrial fabric testing evaluates the strength, durability, performance, and quality of fabrics used in industrial, automotive, filtration, protective, and commercial applications.

I - Mechanical Testing

- Mass Per Unit Area
- Density
- Thickness
- Breaking Strength & Elongation Properties
- Seam Strength
- Tear Strength (Trapezoid / Tounge / Trouser / Elmendorf)
- Bursting Strength - Ball / Hydraulic Method
- Compression Elasticity Ratio
- Adhesion of Coated Fabrics
- Strength of Coating
- Puncture Resistance
- Impact Resistance
- Abrasion Resistance
- Water Repellency of Fabrics

II - Thermal Testing

- Heat Ageing: Change in Properties
- Low Temperature Resistance - Bend / Impact
- Flammability and Flame Resistance

III - Chemical Testing

- Water Absorption
- Blocking Resistance
- Resistance to penetration by water
- Hydrolysis Resistance / Hydrostatic Resistance

IV - Material Testing

- Fogging
- Humidity Resistance
- Fade Resistance
- Ozone Resistance
- Heat Cycle
- Immersion Shrinkage
- Colour Fastness to washing / Rubbing
- Colour fastness to artificial light: Xenon Arc Lamp.



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Films - Testing

Plastic film testing evaluates the quality, strength, durability, and performance of polymer films used in packaging, industrial, medical, and agricultural applications.

I - Mechanical Testing

- Density
- Thickness
- Breaking Factor
- Tensile & Elongation Properties
- Peel strength of films, adhesive tapes
- Adhesion / Bond strength of film composites
- Elastic Modulus
- Secant Modulus
- Tear Strength (Graves / Trouser / Elmendorf)
- Impact Resistance - Free Falling Dart Method
- Coefficient of friction (Kinetic / Static)
- Puncture Resistance

II - Thermal Testing

- Low Temperature Brittleness Point / Impact
- Burning rate

III - Optical Testing

- Gloss
- Haze & Total Transmittance
- Reflectance

IV - Chemical Testing

- Water Absorption
- Water Vapour Transmission Rate
- Permeance & Gas Permeability
- Overall Migration
- Sealability
- Odour

V - Electrical Testing

- Dielectric Strength



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Foam & Sponge Testing

Cellular materials, foams, and sponges are widely used for lightweight cushioning, insulation, sound absorption, and durability across automotive, packaging, furniture, and industrial applications.

I - Mechanical Testing

- Apparent Density
- HardnessTensile
- Properties Compressive Strength
- Modulus Flexural Strength,
- Modulus & RecoveryShear properties
- Tear Strength (Trouser Method / Angle test piece)
- Peel Strength Compression
- Creep Compression
- Set Compression
- Deflection Co efficient Indentation Force
- Deflection Indentation Hardness 25%, 40%, 65%
- Fatigue by constant-load pounding
- Abrasion resistance
- Resilience by Ball
- Rebound Hysteresis loss rate

III - Material Testing

Shrinkage / Staining ResistanceOil Immersion Test

Ozone Resistance Test: Air Flow Permeability, Air flow valueOpen Cell Content / Cell Size of Rigid Cellular Foam

IV - Chemical Testing

- Flammability Loss on Ignition
- Water Absorption
- Water vapour
- transmission rate
- Water vapour
- permeability

II - Thermal Testing

Low Temperature Resistance

TestAccelerated Ageing:

Change in PropertiesHeat Ageing: Change in

Properties Wet Heat Ageing: Change in

PropertiesSteam Autoclave AgeingThermal

Conductivity / Thermal stability

V - Product Testing

- Product Specifications Testing



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Hose & Pipes Testing

Hose, Tube, and Pipe Testing services for industrial and commercial applications with reliable product and material evaluation.

I - Mechanical Testing

- Tensile Strength & Elongation
- Tension Test / Compression Set
- Flexibility of Hose
- Volumetric Expansion
- End Fitting pull off test
- OD Expansion
- Adhesion
- Twist
- Warp
- Rise
- Kink Test

II - Permeability Testing

- Permeability test
- Fuel Permeation
- Permeability to gas

III - Electrical Testing

- Electrical Conductivity
- Electromechanical degradation
- Electrochemical degradation

IV - Creep Testing

- Internal Pressure Creep Rupture Test
- Creep test, Tensile creep, Flexural creep test.

V - Pressure Testing

- Hydrostatic Pressure Test / Leakage
- Elongation & Contraction
- Proof Pressure
- Hold Test
- Bursting Test
- Vacuum Test
- Swelling Test: Volume Change

VI - Environmental Properties

- Fluid Resistance - Oil / Water / Fuel
- Immersion Test
- Chlorine and detergent test
- Odour and Taste test
- Water absorption
- Fungus Test
- Resistance of Lining to n-Pentane
- Resistance to Zinc Chloride
- Methanol Fuel Resistance
- Auto Oxidised Gasoline

VII - Environmental property Testing

- Effect on the composition of Resistance to sulfuric acid

VIII- Thermal Properties - Hot and Cold

- Low Temperature Test on hose
- Low Temperature Test on tube & Cover
- Strength Deterioration
- Air Aging Test
- Air Heat Ageing Test

IX - Flammability Testing

- Burning Behaviour / Flame Resistance test

X - Odour Testing

- Odor and Taste Tests

XI - Weathering Testing

- Ozone Resistance
- Resistance to steam
- Weatherability Test (Fluorescent UV/Xenon)



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Functional & Durability Tests - Product Tests

Advanced testing services for thermal cycling, weathering, and environmental durability evaluation.

I - Product Tests

- Heat Cycle Resistance / Heat and Humidity cycle Resistance
- Heat Ageing Resistance
- Thermal Shock Resistance
- Impact Resistance- Plastic parts
- Fatigue tests, Durability tests
- Chemical Resistance - Plastic parts
- Wear Resistance
- Scratch Resistance: Erichsen / Sapphire Method
- Pencil hardness test
- Scuffing test - rubbing]
- Fogging Resistance Test
- Weatherability Test (Fluorescent UV/Xenon)
- Testing Methods for Coatings and Coating Films
- Colour determination, colour difference, transmittance measurements
- Haze and Transmittance measurements
- Grey Scale - Colour change / Staining
- Yellowness Index
- Gloss Measurements
- Fading Resistance
- Water Spray, Water Jet tests

- Odour Testing
- Flammability test
- Vertical Burning tests
- Horizontal Burning tests
- Limiting Oxygen Index LOI
- Burst Test
- Cyclic Pressure Test
- Vacuum Strength
- Dynamic Coolant Pressure Test
- Leak Test
- High pressure water spray test
- Thermal Ageing
- Welding Resistance
- Impact Resistance
- Thermal Shock
- Heat and Cold cyclic Test

- Insulation Resistance
- Low Voltage and Low Current Resistance
- Current Cycle Test
- Insertion Separation Durability
- Water Resistance
- Chemical Resistance
- Ozone Resistance
- Conductor Resistance
- Withstand Voltage
- Low Temperature Characteristics
- Fluid compatibility of wires
- IP Testing Against foreign objects
- IP Testing Against Water

II- Electrical Product - Testing

- Volume Resistivity
- Surface Resistivity
- Dielectric Constant
- Dissipation Factor
- Breakdown voltage
- Electrical conductivity
- Leakage current
- Voltage drop
- Temperature rise
- Insertion, Retention Force Measurements



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Automotive Testing

Automotive testing evaluates the performance, durability, safety, reliability, and quality of automotive components under mechanical, thermal, chemical, electrical, and environmental conditions.

I - Mechanical Testing

- Tensile Strength Testing
- Compression Testing
- Flexural Testing
- Impact Testing
- Fatigue Testing
- Hardness Testing
- Peel Adhesion Testing
- Bond Strength Testing

II - Thermal Testing

- Heat Aging Testing
- Thermal Cycling Testing
- HDT / Vicat Testing
- Thermal Stability Analysis
- DSC Analysis
- TGA Analysis

III - Chemical & Corrosion Testing

- Chemical Resistance Testing
- Fuel Resistance Testing
- Oil Resistance Testing
- Salt Spray Testing
- Corrosion Resistance Testing
- Humidity Testing

IV - Environmental Testing

- UV Weathering Testing
- Accelerated Aging Testing
- Vibration Testing
- Shock & Bump Testing
- Climatic Testing

V - Material Characterization

- FTIR Analysis
- SEM / EDX Analysis
- Melt Flow Index Testing
- Density Testing
- Polymer Identification
- Failure Analysis

VI - Electrical & Safety Testing

- Dielectric Strength Testing
- Insulation Resistance Testing
- Flammability Testing
- Leakage Current Testing
- Electrical Reliability Testing



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Medical Device Testing

Medical device testing ensures the safety, performance, durability, and regulatory compliance of medical devices, healthcare materials, and biomedical products.

I - Mechanical Testing

- Tensile Strength Testing
- Compression Testing
- Flexural Testing
- Peel Adhesion Testing
- Bond Strength Testing
- Burst Pressure Testing
- Fatigue & Cyclic Testing
- Hardness Testing
- Torque Testing

II - Material Testing

- Density & Specific Gravity
- Melt Flow Rate (MFR/MFI)
- Thermal Stability Testing
- Moisture Content Analysis
- Polymer Identification by FTIR
- DSC & TGA Analysis
- Material Composition Analysis

III - Biocompatibility Testing

- Cytotoxicity Evaluation
- Skin Irritation Testing
- Sensitization Testing
- Hemocompatibility Testing
- Biological Evaluation Support

IV - Sterilization & Packaging Validation

- EO Sterilization Validation
- Gamma Sterilization Compatibility
- Packaging Integrity Testing
- Seal Strength Testing
- Accelerated Aging Study
- Shelf Life Validation

V - Chemical Testing

- Chemical Resistance Testing
- Residual Chemical Analysis
- Corrosion Resistance Testing
- Extractables & Leachables Study
- Heavy Metal Screening

VI - Electrical & Electronic Testing

- Dielectric Strength Testing
- Insulation Resistance Testing
- Leakage Current Testing
- Electrical Safety Testing

VII - Environmental & Reliability Testing

- UV Weathering Testing
- Thermal Cycling Testing
- Humidity Resistance Testing
- Vibration & Shock Testing
- Accelerated Durability Testing

VII - Environmental & Reliability Testing

- UV Weathering Testing
- Thermal Cycling Testing
- Humidity Resistance Testing
- Vibration & Shock Testing
- Accelerated Durability Testing

VIII - Analytical Testing

- Fourier Transform Infrared Spectroscopy (FTIR)
- Differential Scanning Calorimetry (DSC)
- Thermogravimetric Analysis (TGA)
- SEM / EDX Analysis
- Failure Analysis Support



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