



ANALYTICAL LAB INSTRUMENTS

Analytical Lab Instruments

Precision, Reliability & Compliance for Modern Analytical Laboratories

Analytical Lab Instruments are the working backbone of every modern laboratory — the precision tools that scientists, engineers, and quality-control professionals rely on every day to identify, quantify, characterize, and validate the substances that drive industry, healthcare, research, and regulation. From measuring the refractive index of a fruit juice to determining the calorific value of a fuel sample, from quantifying trace metals in pharmaceutical raw materials to digesting complex matrices for elemental analysis, analytical lab instruments transform raw samples into the reliable, defensible data that decision-makers depend on.

Torontech offers one of the most comprehensive portfolios of analytical laboratory instruments available today. The range covers the full analytical workflow from sample preparation to final measurement: spectroscopy and spectrometry instruments (XRF, XRD, AAS, OES, ICP-OES, LIBS, FTIR, UV-VIS, AFS, RDE-OES); digital density meters (ToronDDM™ Series); melting point apparatus; dropping point and softening point testers; Raman microscopes; microwave digestion systems; circulators and chillers; automatic digital refractometers; polarimeters; High Performance Liquid Chromatography (HPLC); Gas Chromatography (GC); cold traps; rotary evaporators; bomb calorimeters (ToronBC™ Series); inorganic sample preparation systems (ToronPrep Series); potentiometric titrators (ToronAPT™ 2000); ion chromatographs; viscosity and low-temperature testing equipment; and many more.

Every Torontech analytical lab instrument is engineered around three core principles: laboratory-grade analytical performance, intuitive operation by both expert and entry-level users, and full compliance with the international standards that governments, regulators, and customers demand. Whether your laboratory operates under ASTM, ISO, US EPA, FDA CFR 21 Part 11, USP pharmacopoeia, or regional standards such as JIS, BS, or DIN, Torontech instruments are built to deliver universally accepted, audit-ready data — every test, every batch, every shift.

Equip Your Laboratory for Reliable, Defensible Results

In today's data-driven scientific and industrial landscape, the credibility of your laboratory rests entirely on the quality of the analytical instruments behind every result. A single inaccurate reading can compromise a clinical trial, fail a regulatory audit, send a defective product to market, or undermine years of research. The companies and institutions that consistently deliver world-class results are the ones that equip their laboratories with analytical instruments built for accuracy, reliability, and compliance — and the Torontech Analytical Lab Instruments portfolio gives you exactly that.

Whether you are screening pharmaceutical raw materials for trace metals, verifying lubricant viscosity at -40 °C, certifying drinking water for regulatory compliance, characterizing new polymer formulations, or running a busy commercial testing laboratory under tight turnaround pressure, Torontech has the analytical instrument platform engineered to meet your needs. From compact density meters and refractometers to fully automated HPLC systems, ICP-OES platforms, and microwave digestion suites, every Torontech instrument is built to deliver world-class results backed by industry-leading service and support.

Don't compromise on the instruments that define the quality of your work. Equip your laboratory with the analytical platform trusted by quality-assurance professionals, R&D scientists, and regulatory specialists across every continent.

APPLICATIONS

Applications in Industries

Analytical lab instruments are mission-critical across virtually every science-driven industry of the modern global economy. The Torontech analytical instrument range supports an extensive list of industry applications, including:

- **Pharmaceutical & Biotechnology** — Raw-material identification, API purity testing, residual-metal analysis per USP <232>/<233>, dissolution and stability studies, formulation verification, and FDA CFR 21 Part 11-compliant data management using HPLC, FTIR, UV-VIS, AAS, density meters, melting point apparatus, and titrators.
- **Petroleum, Lubricants & Petrochemical** — Kinematic viscosity, pour and cloud point, freezing point, calorific value, sulfur content, wear-metal analysis, and refractive-index testing of crude oils, fuels, lubricants, greases, and refinery streams using bomb calorimeters, viscometers, density meters, RDE-OES, and refractometers.
- **Environmental & Water Analysis** — Heavy metals, anions, cations, organic pollutants, and trace-element monitoring in drinking water, wastewater, soil, and air using AAS, ICP-OES, AFS, ion chromatography, UV-VIS, microwave digestion, and HPLC.
- **Food, Beverage & Agriculture** — Sugar content (Brix), refractive index, density, pH, trace-metal contamination, additive verification, nutritional analysis, and regulatory compliance using refractometers, density meters, AAS, AFS, ion chromatography, HPLC, and titrators.
- **Chemical & Polymer Manufacturing** — Raw-material identification, reaction monitoring, solvent recovery, formulation QC, polymer characterization, and process analytical chemistry using FTIR, HPLC, GC, Raman microscopy, rotary evaporators, polarimeters, and density meters.
- **Metals, Mining & Metallurgy** — Alloy composition, ore grade analysis, sample digestion, carbon/sulfur determination, and precious-metal verification using XRF, OES, LIBS, microwave digestion, bomb calorimeters, and ICP-OES.
- **Electronics & Semiconductor** — RoHS hazardous-element screening, ionic contamination, ultrapure water analysis, and trace-metal verification using XRF, ion chromatography, FTIR, and ICP-OES.
- **Cosmetics & Personal Care** — Active-ingredient identification, viscosity and density verification, optical rotation, color and refractive-index testing using HPLC, UV-VIS, polarimeters, viscometers, density meters, and refractometers.
- **Cement, Ceramics & Construction Materials** — Carbon/sulfur determination, clinker analysis, raw-mix characterization, and refractory testing using XRF, carbon/sulfur analyzers, OES, and microwave digestion.
- **Universities, Research Institutes & Forensic Laboratories** — Method development, fundamental materials research, forensic evidence analysis, teaching, and student training across the full spectrum of analytical techniques.

FEATURES

Why Choose Torontech for Your Analytical Lab Needs

With more than two decades of experience supplying advanced analytical instruments to laboratories, research institutions, and industrial facilities across more than 60 countries, Torontech has earned a global reputation as a trusted partner for analytical laboratory solutions. Choosing Torontech analytical lab instruments means investing in more than just equipment — it means partnering with an organization committed to your long-term analytical success.

Single-Source Comprehensive Portfolio

Torontech offers one of the broadest analytical lab instrument portfolios on the market — spanning spectroscopy and spectrometry, chromatography (HPLC and GC), density and refractive index, melting and dropping point, viscosity and low-temperature testing, sample preparation (microwave digestion, inorganic sample prep), calorimetry, titration, water purification, chillers, and more. Working with a single trusted supplier simplifies procurement, training, service, and standardization across your entire laboratory.

Global Standards Compliance

Every Torontech instrument is engineered to comply with the world's most demanding analytical standards — ASTM (D445, D97, D2500, D1177, D6595, D6728, and many others), ISO, US EPA (3050, 3051A), USP <232>/<233>, FDA CFR 21 Part 11, EN 13657, ISO 15587, plus regional standards including JIS, BS, and DIN. This compliance ensures your analytical data is universally accepted, regulator-ready, and defensible in audits and customer reviews.

Cutting-Edge Technology

Torontech instruments incorporate advanced technologies — high-resolution CCD and PMT detectors, oscillating U-tube density measurement, Paschen-Runge optical platforms, shaftless photoelectric encoders, intelligent automation, multi-language touch-screen interfaces, and cloud-ready data export. The result is faster analysis, better accuracy, and lower operating cost across the entire instrument lifetime.

Flexible Configurations & Scalability

Every Torontech analytical platform can be configured to match laboratory size, throughput, and budget — from entry-level routine-QC instruments up through fully automated, research-grade systems. From compact manual units suitable for small QC labs through high-throughput automated platforms for commercial testing labs, the Torontech engineering team works with every customer to specify the ideal instrument configuration.

Expert Application Support

Torontech's team of application scientists and product specialists is available across multiple time zones to support method development, installation, operator training, calibration, validation, and ongoing technical service. With offices and authorized partners throughout the USA, Canada, UAE, KSA, GCC, EU, India, APAC, Africa, and Latin America, expert assistance is always within reach — no matter where your laboratory operates.

Cost-Effective Value

Torontech delivers premium-grade analytical performance at a transparent, competitive price point — eliminating the inflated cost structures of legacy brands while maintaining the accuracy, durability, and feature set that demanding professionals require. From compact entry-level units to full research-grade systems, every Torontech analytical instrument is engineered to deliver outstanding return on investment.



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