



PETROCHEMICAL TESTING EQUIPMENT

Petrochemical & Petroleum Testing Equipment

Torontech is a globally recognized specialist in petroleum and petrochemical testing instruments, supplying standards-compliant analytical equipment to refineries, trading terminals, independent testing laboratories, research institutions, and government inspection agencies on every continent. Our petrochemical and petroleum testing equipment portfolio represents one of the most comprehensive collections of petroleum analytical instruments available from a single, dedicated supplier — spanning every major test category, standardized method, and product application encountered in the modern petroleum industry.

The global petroleum industry operates under some of the most demanding quality and regulatory requirements of any sector. Every petroleum product — from crude oil at the wellhead to the final liter of fuel dispensed into a vehicle — must be verified against internationally recognized specifications before it can be safely stored, transported, traded, or used. These specifications encompass physical properties, volatility, stability, viscosity, elemental composition, lubrication performance, and a host of application-specific parameters that together define product identity, safety, and commercial value.

Torontech's response to this challenge is a fully integrated portfolio of more than 200 instruments organized across five core testing technology categories and thirteen specialized application-specific product lines. Whether your laboratory needs a single instrument for a specific test method or a complete turnkey analytical facility equipped for every mandatory quality parameter, Torontech has the expertise, the product range, and the global support network to deliver — and to keep your instruments performing at specification throughout their service life.

Why Choose Torontech for Your Petrochemical & Petroleum Testing?

Torontech's position as a trusted petroleum testing equipment specialist is built on five pillars that no general-purpose laboratory instrument supplier can match:

1. The Most Complete Petroleum Testing Portfolio Available

With more than 200 instruments spanning physical properties, volatility and stability, viscosity and low-temperature performance, elemental and composition analysis, and lubrication and tribology — plus thirteen application-specific product lines covering every major petroleum product category from crude oil to engine coolant — Torontech provides broader petroleum testing coverage from a single supplier than any competitor in the market. This means simplified procurement, unified technical support, and the confidence that whatever test method your specification requires, Torontech has the instrument.

2. Standards-First Engineering — ASTM, IP, ISO, EN, and Beyond

Every instrument in Torontech's petroleum testing portfolio is designed, validated, and documented for compliance with the international test standards that govern petroleum product quality worldwide. From ASTM D93 flash point and ASTM D445 kinematic viscosity through ASTM D3241 JFTOT thermal oxidation stability, EN 14112 biodiesel Rancimat oxidation stability, and ISO 8217 marine fuel compliance — Torontech instruments produce results that are accepted by trading counterparties, regulatory bodies, and certification agencies in every major petroleum market. Standards compliance is not an afterthought at Torontech — it is the starting point of every instrument design.

3. Scalable Automation for Every Laboratory Size and Budget

Torontech understands that a rural bottling plant LPG laboratory has fundamentally different throughput, budget, and staffing requirements compared to a major refinery quality laboratory or an independent petroleum testing institute. That is why nearly every critical test parameter in the Torontech portfolio is available at multiple levels of automation — from straightforward manual instruments that any trained technician can operate, through semi-automatic instruments that handle the most time-critical process steps automatically, to fully automatic, unattended systems that can process dozens of samples per shift with minimal operator intervention. You choose the level of automation your laboratory needs today, and upgrade as your throughput grows.

4. Application-Specific Expertise — Not Just Generic Instruments

Torontech's petroleum testing instruments are not general-purpose laboratory equipment adapted for petroleum use. They are purpose-designed and application-validated instruments — the LPG testing portfolio is engineered specifically for pressurized gas sample handling; the aviation fuel testing range addresses every mandatory parameter in DEF STAN 91-091 and ASTM D1655; the biofuels portfolio is mapped to EN 14214 and ASTM D6751 from the ground up; the marine testing range is aligned with ISO 8217 and IMO 2020 sulfur cap requirements. This application-specific approach means that when you choose a Torontech instrument, you are not just buying hardware — you are buying a validated, ready-to-use solution for your specific petroleum product and test method.

5. Global Technical Support and Long-Term Partnership

A petroleum testing instrument is only as valuable as its uptime. Torontech's global technical support network — spanning installation, operator training, method validation, calibration services, preventive maintenance, and spare parts supply — ensures that your investment in Torontech instruments delivers value throughout the instrument's service life. Our application specialists have deep, specialist-level petroleum testing knowledge, and our customer support teams are experienced in supporting laboratories through ISO/IEC 17025 accreditation, regulatory audits, and new product qualification programs. When you choose Torontech, you are choosing a long-term technical partner, not just an equipment vendor.

Discover how Torontech can elevate your petrochemical and petroleum testing processes. Browse our product categories and find the perfect equipment tailored to your specific requirements. [Contact us](#) today for more information and to request a quote.

APPLICATIONS

Application Matrix — Which Testing Categories Apply to Your Product?

The table below shows which Torontech testing technology categories are relevant for each petroleum product application. Use this to identify which instrument families your laboratory needs.

Application	Physical Properties Testing	Volatility & Stability Testing	Viscosity & Low Temp Testing	Elemental & Composition Analysis	Lubrication & Tribology
LPG Testing Equipment Vapor pressure , density, water, H ₂ S, sulfur, GC composition, copper corrosion, dew point	●	✓	●	✓	—
Aviation Fuel Testing Flash point, freezing point, JFTOT, lubricity (BOCLE), MSEP, conductivity, sulfur, particulate, ICP	✓	✓	✓	✓	●
Biofuels Testing Flash point, oxidation stability (Rancimat), viscosity, cold flow, sulfur, ICP metals, GC FAME content	✓	✓	✓	✓	—
Bitumen & Asphalt Testing Flash point, penetration, ductility, softening point, viscosity, solubility, RTFO/TFO aging, density	✓	✓	✓	●	—
Crude Oil Testing API gravity, BS&W, salt, sediment, carbon residue , sulfur, water content, ICP metals, calorific value	✓	✓	●	✓	—

Application	Physical Properties Testing	Volatility & Stability Testing	Viscosity & Low Temp Testing	Elemental & Composition Analysis	Lubrication & Tribology
Diesel Testing Flash point, distillation, CFPP, HFRR lubricity, sulfur (ULSD), oxidation stability, cetane, ICP	✓	✓	✓	✓	●
Marine Oils Testing Viscosity at 50/100° C , sulfur (XRF/coulometric/lamp), sediment, carbon residue, calorific value, rust	✓	✓	✓	✓	●
Petrol & Gasoline Testing Octane (RON/MON), RVP, distillation, GC oxygenates, sulfur (ULS), oxidation stability, lead, FIA	✓	✓	✓	✓	—
Lube Oils Testing Kinematic viscosity, pour point, flash point, oxidation stability, ICP wear metals, condition monitoring	✓	✓	✓	✓	✓
Lube Grease Testing Penetration/NLGI grade, dropping point, oil separation, water resistance, EP/wear, fretting, EMCOR	✓	✓	●	✓	✓

Application	Physical Properties Testing	Volatility & Stability Testing	Viscosity & Low Temp Testing	Elemental & Composition Analysis	Lubrication & Tribology
Engine Coolant Testing Freeze point, boiling point, multi-metal corrosion, aluminum corrosion, cavitation, foaming, viscosity	●	—	✓	—	—
Brake Fluid Testing Boiling point (ERBP/wet), low-temp viscosity, flash point, water content, corrosion (metals & Al)	●	✓	✓	—	—
Wax Testing Melting/congealing point, needle penetration, oil content, DSC thermal analysis, color, water, sulfur	✓	●	—	●	—

Legend for Application Matrix: ✓ Primary coverage ● Applicable — Not primary focus

For a complete product list and instrument specifications within each category and application line, visit www.torontech.com or contact Torontech's application team for a personalized laboratory recommendation.

THEORY & METHOD

Testing Technology Categories

Torontech's petroleum testing instrument portfolio is organized into five core technology categories, each addressing a distinct dimension of petroleum product quality:

Testing Category	What It Covers	Key Parameters Measured	Primary Standards	No. of Instruments
Physical Properties Testing	Density, water content, distillation, sediment, centrifuge BS&W, carbon residue, ash content, color & optical appearance	API gravity, water %, distillation profile, BS&W, CCR, MCRT, ash %, Saybolt color	ASTM D287, D1298, D86, D1160, D473, D4870, D1796, D524, D4530, D482, D1500	20+
Volatility & Stability Testing	Flash point (closed & open cup), vapor pressure (RVP), oxidation stability, thermal oxidation (JFTOT), combustion behavior, basic composition residues	Flash point °C, RVP kPa, induction period h, smoke point mm, carbon residue %, ash %	ASTM D93, D56, D92, D323, D5191, D525, D2440, EN 14112, ASTM D3241, D1322, D524, D4530	20+
Viscosity & Low Temperature Testing	Kinematic viscosity (manual to fully auto, dual bath), pour point, cloud point, freeze point, advanced rotational viscometry	Kinematic viscosity mm²/s, pour point °C, cloud point °C, freeze point °C, viscosity index	ASTM D445, D97, D2500, D1177, D2270, ISO 3104	12+
Elemental & Composition Analysis	Sulfur (5 technologies), gas chromatography (7 application-specific systems), ICP-OES, RDE-OES, AAS, UV-VIS, CHN & C/S combustion analyzers	Sulfur ppm/%, hydrocarbon composition %, trace metals mg/kg, C/H/N %, FAME content %	ASTM D5453, D4294, D1266, D3227, D2163, D1945, D3241, D5708, D5373, EN 14103	20+
Lubrication & Tribology	Four-ball EP & wear (manual to fully auto), universal friction & wear machine, fretting wear (ASTM D4170), Timken OK load capacity testers	Weld load kgf, wear scar diameter mm, friction coefficient, OK load kgf, fretting wear mg	ASTM D2783, D4172, D2266, D2596, D2509, D2782, D4170, G99, G77, IP 239	10+

Legend for Application Matrix: ✓ Primary coverage ● Applicable — Not primary focus



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