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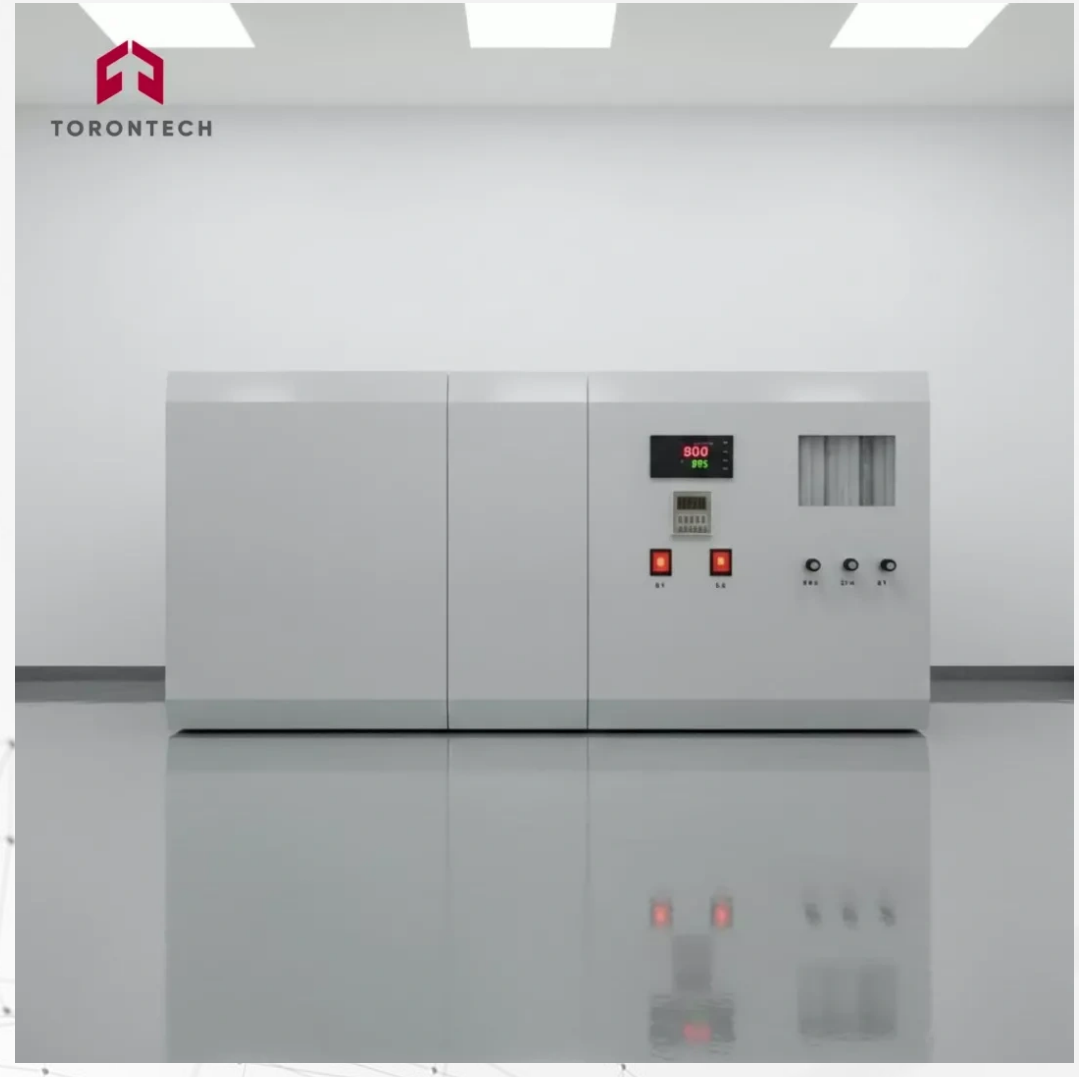

PETROCHEMICAL ELEMENTAL & COMPOSITION ANALYZERS

Petrochemical Elemental & Composition Analyzers

Elemental and compositional analysis sits at the heart of modern petroleum product quality control, regulatory compliance, and research programs. Beyond bulk physical properties, the precise chemical identity and elemental composition of a petroleum product — its sulfur species, hydrocarbon composition, trace metal content, and fundamental elemental makeup — determine its environmental impact, performance characteristics, suitability for processing, and compliance with increasingly stringent international specifications.

Torontech's Elemental & Composition Analysis portfolio brings together four complementary instrument categories: sulfur and elemental analysis, gas chromatography systems, spectroscopy and advanced analytical instruments, and elemental composition analyzers. Together, these product families provide petroleum laboratories with the most complete elemental and compositional analysis capability available from a single, specialized petroleum testing equipment supplier.

APPLICATIONS

Application

Torontech's Elemental & Composition Analysis instruments address elemental and compositional measurement requirements across the full petroleum industry value chain:

- Fuel regulatory compliance: Sulfur tester systems for ultra-low sulfur diesel, Euro 6 gasoline, and IMO 2020 bunker fuel sulfur limit verification.
- Lubricant oil analysis programs: ICP-OES and RDE-OES for additive element verification in new oils and wear metal monitoring in used lubricant analysis.
- Refinery process control: Gas chromatography for naphtha composition, natural gas analysis, and LPG hydrocarbon content monitoring.

- Electrical asset management: GC dissolved gas analysis (DGA) of transformer oil and corrosive sulfur testing for power transformer condition monitoring.
- Renewable fuel quality: ICP for biodiesel catalyst residues and biodiesel GC for FAME content, free glycerol, and methanol per EN 14103 and ASTM D6584.
- Crude oil characterization: Elemental composition analysis (CHN, C/S) and trace metal ICP for crude oil evaluation, refinery feedstock planning, and equipment protection.
- Environmental and catalyst analysis: CHN and carbon/sulfur analyzers for spent catalyst coke and sulfur deposition measurement, and environmental sample elemental analysis.

FEATURES

Why Choose Torontech's Petrochemical Elemental & Composition Analyzers Series?

Torontech's integrated elemental and composition analysis portfolio delivers unique advantages for petroleum laboratories:

- Broadest Petroleum Application Coverage: No competitor offers the same combination of application-specific GC systems, matrix-specific ICP configurations, multiple sulfur analysis technologies, and combustion-based elemental analyzers in a single petroleum-focused portfolio.
- Application-Ready Instruments: Every Torontech GC, ICP, and sulfur tester is pre-configured and validated for its target petroleum analysis method, reducing deployment time and eliminating costly method development.
- Regulatory Compliance Built In: Sulfur, ICP, GC, and elemental analyzer instruments are all designed and validated for compliance with the ASTM, EN, ISO, IP, and IEC standards that govern petroleum elemental analysis worldwide.
- Complementary Technologies: Torontech's elemental and composition analysis instruments are designed as complementary systems — a laboratory can build a complete elemental analysis capability using Torontech instruments across all four sub-categories, with consistent technical support from a single supplier.

- Expert Petroleum Analytical Knowledge: Torontech's application specialists have deep expertise in petroleum elemental analysis requirements, providing guidance on instrument selection, method validation, and troubleshooting that a general-purpose laboratory instrument supplier cannot match.

TECHNICAL SPECIFICATIONS

Categories & Products Covered

1. Sulfur & Elemental Analysis

Five sulfur analysis technologies covering ultra-low sulfur to high-concentration measurement, mercaptan sulfur, and corrosive sulfur in transformer oils — aligned with ASTM D5453, D4294, D1266, D3227, and D1275.

2. Gas Chromatography (GC Systems)

Seven application-specific gas chromatography systems covering transformer oil fault gas analysis, gasoline oxygenates, naphtha DHA, LPG composition, natural gas, and biodiesel quality — each pre-configured for immediate compliance with its target standard.

3. Spectroscopy & Advanced Analytical Instruments

Eight spectroscopy instruments spanning five matrix-specific ICP configurations, RDE-OES for used oil wear metals, AAS for lead in gasoline, and UV-VIS spectrophotometry — providing complete optical spectrometry coverage for petroleum elemental analysis.

4. Elemental Composition Analyzers

Combustion-based elemental composition analyzers for simultaneous C/H/N determination and combined C/S analysis of petroleum products, solid fuels, catalysts, and environmental samples.

TORONTECH.com

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