

Elemental Spectrometer



AI Overview

Elemental spectrometers are analytical instruments used to detect and quantify chemical elements in various samples using techniques like ICP-OES, XRF, and RDE-OES.

Overview

Elemental spectrometers are designed to measure the presence and concentration of elements in solids, liquids, or gases. They operate by exciting atoms in a sample and detecting the emitted or absorbed light, X-rays, or other signals, which are characteristic of specific elements. These instruments are widely used in research, industry, environmental monitoring, and quality control.

Types of Elemental Spectrometers

- Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES): Uses plasma to excite atoms and measures emitted light for multi-element detection. Systems like Thermo Scientific™ iCAP™ PRO series offer high-speed, sensitive analysis with minimal maintenance.
- X-ray Fluorescence (XRF) Spectrometers: Detect elements by measuring secondary X-rays emitted from a sample when irradiated with primary X-rays. Portable handheld XRF analyzers allow on-site metal analysis with high precision and fast results.
- Rotating Disc Electrode Optical Emission Spectroscopy (RDE-OES): Specialized for oil, lubricants, fuels, and coolants, detecting trace metals and contaminants. Instruments like the Spectroil 100 Series provide rapid, precise elemental analysis for maintenance and monitoring programs

Article Content

Dec 24, 2025

Mobile optical emission spectrometer ferro.lyte®

The mobile spectrometer ferro.lyte with its innovative all-in-one concept is optimized for the precise metal

Sep 13, 2025

Product portfolio: Analyzers, spectrometers & software

Product portfolio Our product portfolio comprises of a wide range of organic and inorganic elemental analyzers, nitrogen and protein

Oct 06, 2025

isoprime precisION stable isotope mass spectrometer

The isoprime precisION stable isotope ratio mass spectrometer is the most flexible and powerful IRMS instrument ever created.

Mar 27, 2026

XRF Spectrometers | Bruker

Bruker XRF spectrometers are combining highest accuracy and precision with simple and fast sample

Nov 07, 2025

Elemental Analysis

Elemental analysis can be qualitative or quantitative. Shimadzu has been a world leading manufacturer of high-quality elemental

Jul 24, 2026

Product portfolio: Analyzers, spectrometers & software

Discover our elemental analyzers, nitrogen and protein analyzers, TOC analyzers, optical emission

Oct 09, 2025

TITAN Handheld XRF Analyzer | Bruker

TITAN: Power Over the Elements This high-performance handheld X-ray Fluorescence (XRF) gun makes ultra-fast, highly-accurate

May 15, 2026

XRF Analyzers | XRF Spectrometers | Malvern Panalytical

X-ray Fluorescence (XRF) spectrometers are powerful analytical instruments designed to unveil the elemental

Sep 10, 2025

Elemental Analysis

General information on elemental analysis The procedures for elemental analysis, a section of analytical chemistry based on atomic

Feb 28, 2026

Elemental Spectroscopy

Introduction to Elemental Spectroscopy Elemental spectroscopy measures in-service fluid samples for wear metals,

Apr 30, 2026

Elemental Analysis Solutions & Analytical Instruments | SPECTRO

SPECTRO is a global leading supplier of advanced analytical instruments like ICP, Arc Spark OES, and XRF spectrometers for

Jan 29, 2026

Spectroscopy, Elemental & Isotope Analysis

Spectroscopy, Elemental & Isotope Analysis Research, production and analytical laboratories worldwide rely on us for rapid, efficient

Nov 02, 2025

How Does an Elemental Analyzer Work?

This article will provide an overview of elemental analysis and how one of the common technologies employed, the

Aug 01, 2025

SpectrOil 100 Series

It is widely used in commercial oil laboratories, on-site or trailer labs, as a proven means of precisely

Sep 04, 2025

ARL QUANT^{TX} EDXRF Spectrometer

ARL QUANT^{TX} benchtop energy-dispersive X-ray fluorescence (EDXRF) spectrometer for efficient and

May 15, 2026

Elemental Analysis

Shimadzu has been a world leading manufacturer of high-quality elemental analysis spectrometers that

Feb 09, 2026

S8 TIGER

The next generation WDXRF spectrometer: S8 TIGER Series 3. Built on experience,

Mar 31, 2026

Optical Emission Spectrometers

All Bruker optical emission spectrometers are operated by Elemental ite. Designed for maximum

Jan 26, 2026

Atomic Absorption Spectrometry (AAS) Information

Find out how atomic absorption spectrometry (AAS) is used to analyze compounds in clinical, food, pharmaceutical, mining, and

Apr 13, 2026

Elemental analyzers

The Zetium, wavelength dispersive X-ray fluorescence spectrometer (WDXRF), represents the pinnacle of

Jan 20, 2026

Elemental Spectrometers

Instruments and accessories for the quantitative determination of chemical elements within a sample.

Dec 01, 2025

Spectroscopy, Elemental & Isotope Analysis Learning Center

Spectroscopy enables elemental analysis and isotope analysis for a range of areas. See videos, documents, and educational

Apr 20, 2026

Optical Emission Spectrometers

Elemental analysis for the metals industry Metal producing industries like foundries, steel- copper-, aluminium plants, and all kinds of

Feb 02, 2026

Elemental analysis

In present-day organic chemistry, spectroscopic techniques (NMR, both ^1H and ^{13}C), mass spectrometry and chromatographic

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://ntmmgroup.co.za>

Email: sales@ntmmgroup.co.za

Phone: +27 82 471 2596

Address: Unit 7, Optic Park, 24 High-Tech Lane, Century City, Cape Town, 7441, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

