

Formaldehyde Spectrometer



AI Overview

A formaldehyde spectrometer is an analytical instrument used to detect and quantify formaldehyde in air or aqueous samples, employing photometric or laser-based infrared methods.

Overview Formaldehyde spectrometers are designed to measure formaldehyde (HCHO), a colorless, pungent gas and a known carcinogen commonly found in indoor air, industrial emissions, and certain aqueous solutions. Monitoring formaldehyde is critical for health safety, regulatory compliance, and environmental protection due to its toxicity and prevalence in building materials, furniture, and industrial processes.

Types of Formaldehyde Spectrometers

Photometric Spectrometers These devices measure the absorbance of light by a colored complex formed when formaldehyde reacts with a chromogenic reagent, such as chromotropic acid, acetylacetone, or Nash reagent. The reaction produces a color change proportional to the formaldehyde concentration, which is quantified using the Beer-Lambert law. Photometric spectrometers are widely used for aqueous samples like disinfectants, preservatives, or wastewater, and are cost-effective and sensitive for low concentrations (e.g., 0.02–8 mg/L HCHO).

Laser Infrared Spectrometers Instruments like the ProCeaS® Formaldehyde Analyzer use pre-calibrated laser infrared spectroscopy to detect formaldehyde in ambient air with high speed and precision, often providing measurements in seconds. These spectrometers are suitable for continuous monitoring in industrial or environmental settings and offer high selectivity, avoiding interference from other volatile organic compounds.

Applications

Indoor Air Quality Monitoring: Detecting formaldehyde off-gassing from building materials and furniture to ensure safe living and working conditions.

Industrial Safety: Monitoring workplace exposure to comply with OSHA or other regulatory limits.

Environmental Analysis: Measuring formaldehyde in ambient air to assess pollution and its contribution to smog formation.

Laboratory Analysis: Q...

Article Content

A Rapid and Interference-Resistant Formaldehyde

In response to this challenge, a novel interference-resistant detection kit leveraging surface-enhanced Raman spectroscopy (SERS) coupled with

Quantitative detection of formaldehyde using solid phase ...

Article Open access Published: 05 September 2023 Quantitative detection of formaldehyde using solid phase microextraction gas chromatography-mass spectrometry coupled to

Use of Mass Spectrometry for the Determination of

Coupled to a detection system such as mass spectrometry, it can be employed for the determination of compounds potentially toxic to humans,

Online real time determination of free formaldehyde content during ...

Real time detection of free formaldehyde content during synthesis process of phenolic resins is of great significance for controlling the quality of resin products. In this paper, we proposed

ERUN ERUN-SP7-N3 Portable Formaldehyde Water Quality Analyzer

Overview The ERUN ERUN-SP7-N3 Portable Formaldehyde Water Quality Analyzer is a field-deployable spectrophotometric instrument engineered for quantitative determination of formaldehyde

Highly sensitive portable laser absorption spectroscopy formaldehyde ...

A portable sensor with an optical case dimension of $46 \times 28 \times 16$ cm³ based on laser absorption spectroscopy for highly sensitive measurement of formal

Formaldehyde Analysis in Non-Aqueous Methanol Solutions by

Barakoti KK, Subedi P, Chalyavi F, Gutierrez-Portocarrero S, Tucker MJ and Alpuche-Aviles MA (2021) Formaldehyde Analysis in Non-Aqueous Methanol Solutions by Infrared

Formaldehyde

Electron-Impact Ionization Cross Sections (on physics web site) Gas Phase Kinetics Database X-ray Photoelectron Spectroscopy Database, version 5.0 Electron

A Rapid and Interference-Resistant Formaldehyde

Formaldehyde is widely utilized across various industries such as food, textiles, and leather, yet its presence raises significant health concerns due to its

Infrared spectroscopy and theory of the formaldehyde

In recent studies employing these methods, our group has reported infrared spectroscopy for several small organic cations. 22–30 The present study

A review of laser-spectroscopy-based gas sensing techniques for

3. Laser-spectroscopy-based formaldehyde gas sensing techniques A variety of laser-based absorption spectroscopic techniques for high-precision, real-time detection of H₂CO have been reported in

Exclusive and ultrasensitive detection of formaldehyde

Formaldehyde, a probable carcinogen, is a ubiquitous indoor pollutant, but its ultrasensitive detection has been a long-standing challenge.

REVIEW OF SPECTROPHOTOMETRIC METHODS FOR

the concentration of formaldehyde for the pollution control purposes. In general, spectrophotometric methods are easy to perform, low-cost, selective and sensitive, but every spectrophotometric method

Formaldehyde quantification using gas chromatography-mass

Formaldehyde (HCHO) is a human toxin that is both a pollutant and endogenous metabolite. HCHO concentrations in human biological samples are reported in the micromolar range;

Advanced Methods for the Determination of

Spectrophotometry involves measuring the intensity of light absorbed by a solution at a specific wavelength. In formaldehyde detection, formaldehyde reacts with a

Methods in Determination of Formaldehyde

Rivero RT, Topiwala V (2004) Quantitative determination of formaldehyde in cosmetics using a combined solid-phase microextraction-isotope dilution mass spectrometry method.

UV-vis spectroscopic detection of formaldehyde and its analogs: A ...

Thus, a facile and efficient approach has been designed to achieve the determination of formaldehyde by ultraviolet and visible (UV-vis) spectrophotometry in liquid media.

Non-Dispersive Ultra-Violet Spectroscopic Detection of Formaldehyde

We describe a simple method for detecting formaldehyde using low resolution non-dispersive UV absorption spectroscopy. A two channel sensor was developed, making use of a

Formaldehyde Test, photometric | Sigma-Aldrich

This Spectroquant ® Formaldehyde Reagent Test allows the accurate quantification of the formaldehyde content in aqueous samples such as disinfectants, preservatives, or process wastewater.

Contact Us

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

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

Email: info@araziyahsafety.co.za

Phone: +27 72 418 3692

Address: 123 Rivonia Road, Sandton, Johannesburg, 2196, South Africa

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

