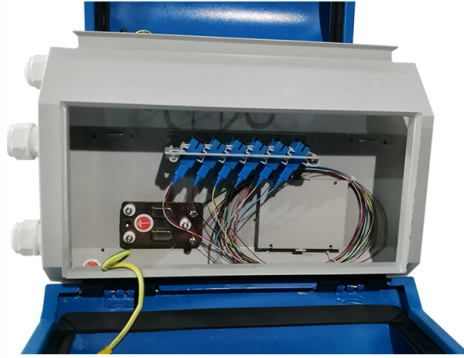


The gas used in the spectrometer



Overview

After the molecules travel the length of the column, pass through the transfer line and enter into the mass spectrometer they are ionized by various methods with typically only one method being used at any given time. Once the sample is fragmented it will then be detected, usually by an, which essentially turns the ionized mass fragment into an electrical signal that is then detected.

AI Overview

Spectrometers use specific gases depending on the type: carrier gases like helium or nitrogen in mass spectrometry, and excitation gases such as argon, xenon, hydrogen, or deuterium in optical spectrometry.

Carrier Gases in Mass Spectrometry

In gas chromatography-mass spectrometry (GC-MS), a carrier gas transports the vaporized sample through the column to the mass spectrometer. Common carrier gases include helium, nitrogen, and sometimes hydrogen, chosen for their inertness and ability to efficiently move the sample without reacting with it. The carrier gas ensures that compounds are separated based on their interaction with the stationary phase and then delivered to the ion source for detection .

Excitation Gases in Optical Spectrometry

For optical spectrometers, particularly those using electrode lamps, gases are used to produce light at specific wavelengths. Examples include:...

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The gas (called a carrier gas or mobile phase) transports the sample through a long, thin glass or metal tube (column) that is coated

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Spectroscopy, study of the absorption and emission of light and other radiation by matter, as

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Learn about the basic principle of gas chromatography mass spectrometry (GC/MS). This GCMS primer explains the fundamentals

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Spectrometer

There are two classes of radiation sources used in spectrometry: continuum sources and line sources. The former are usually lamps

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Mass spectrometry (MS) is ever-present in gas analysis. It is a go-to solution for precisely identifying and quantifying

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Why Is Nitrogen Used in LC-MS? Is It for Maintaining the Vacuum of

The high-vacuum environment required in the mass spectrometer is maintained by vacuum pumps. Instead, nitrogen mainly supports

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This article looks at the history of mass spectrometry and gas chromatography mass

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History of the combination of gas chromatography and

Portable devices just a little too big to hold in one hand are used today to analyze samples at

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Mass Spectrometry

What mass spectrometry is, how it works, and what the technique is used for in analytical chemistry and other sciences.

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GC-MS Principle, Instrument and Analyses and GC-MS/MS

What is gas chromatography mass spectrometry? Gas chromatography mass spectrometry (GC-MS) consists of two

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Module 1: FUNDAMENTALS OF SPECTROSCOPY It's amazing how much we can learn about molecules and materials by shining

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Gas Chromatography

Among the various types of gas chromatography, gas-liquid chromatography is the method most commonly used to separate organic

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Mass spectrometry

Mass spectrometry Mass spectrometry (MS) is an analytical technique that is used to measure the mass-to-charge ratio of ions. The

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The light of celestial objects contains much information hidden in its detailed color structure. In this lab we will separate the light from

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What is mass spectrometry. What is a mass spectrometer, and how does it work. What are its applications. What detectors are used.

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Gas Source Mass Spectrometry: Stable Isotope Geochemistry

Gas source mass spectrometers are the principal instruments used for measuring isotopic ratios of light elements,

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Gas chromatography-mass spectrometry

OverviewIonizationHistoryInstrumentationAnalysisApplicationsSee alsoBibliography

After the molecules travel the length of the column, pass through the transfer line and enter into the mass spectrometer they are ionized by various methods with typically only one method being used at any given time. Once the sample is fragmented it will then be detected, usually by an electron multiplier, which essentially turns the ionized mass fragment into an electrical signal that is then detected.

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The Importance of Argon Gas in Spectrometers

During the excitation stage of metal samples, high-purity argon is introduced into the excitation chamber to purge air

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Gas Spectroscopy

Gas spectroscopy is defined as a technique used to analyze the composition and properties of gases through methods such as

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Spectroscopy 101 – Types of Spectra and Spectroscopy What can we learn from different types of spectra? The basic

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Discover how mass spectrometry identifies and analyzes molecules. Learn its principle, parts,

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Spectroscopy 101 – Types of Spectra and Spectroscopy

When starlight passes through a cloud of gas, some of the light is absorbed and some is transmitted through the gas.

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Introduction to Mass Spectrometry

There are many types of mass spectrometers and sample introduction techniques which allow a wide range of analyses. This

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Spectroscopy 101 – Introduction

Almost everything we know about the make-up, temperature, and motion of planets, stars, and galaxies comes from

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

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