

Article Overview

Mobile spectrometers like ferro.lyte(R), SPECTROTEST, and Niton Apollo can accurately measure carbon content in 316L stainless steel.

Optical Emission Spectrometry (OES) for 316L

Ferro.lyte(R) is a mobile optical emission spectrometer optimized for metal production, processing, and recycling. It uses spark excitation OES to measure elements with low atomic numbers, including carbon, phosphorus, sulfur, and boron, with precision comparable to laboratory instruments. It is particularly suitable for 316 and 316L stainless steel, allowing rapid determination of carbon content on-site. The device features an intuitive touchscreen interface, ONLYTE(R) technology for stable nitrogen analysis, and connectivity via USB, WLAN, LAN, or Bluetooth for data management .

SPECTROTEST is another mobile arc spark spectrometer capable of identifying low-alloy steels and measuring carbon content. It offers both arc and spark excitation modes, automated operation for high sample volumes, and diagnostic software (iCAL 2.0) to maintain calibration despite temperature shifts. This makes it suitable for on-site quality control of 316L stainless steel and other alloys .

Laser-Based Carbon Analysis

Niton Apollo is a portable LIBS (Laser Induced Breakdown Spectroscopy) analyzer designed for fast, accurate carbon measurement in low-alloy and stainless steels. It provides results in about 10 seconds, works directly in the field, and supports integration into analysis reports. The device uses argon cartridges and safety features to ensure reliable operation, making it ideal for production line monitoring and verification of 316L steel .

Key Considerations

- o Portability: All three instruments are designed for on-site use, reducing the need to transport samples to a lab.
- o Speed: Niton Apollo offers near-instant results (~10 seconds), while ferro.lyte(R) and SPECTROTEST provide rapid analysis suitable for multiple samples.
- o Precision: OES-based devices like ferro.lyte(R) and SPECTROTEST provide laboratory-level accuracy, including low-carbon detection.
- o Data Management: Modern spectrometers include software for reporting, calibration, and connectivity to streamline quality control processes.

For 316L stainless steel, these spectrometers allow precise carbon measurement, ensuring compliance with alloy specifications and supporting efficient on-site quality control.

316L Carbon Spectrometer

These carbon analyzers can measure carbon, phosphorous, sulfur, boron, arsenic and tin in low alloy and stainless steels, and

Identification of high-grade steel type AISI 316 and AISI 316L by determining the carbon content

The relaxation process has been investigated using electrochemical impedance spectroscopy (EIS). Formation of

It accurately analyzes elements such as carbon, sulfur, phosphorus, and boron. It's as fast as an XRF, with

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

In spark mode, the SPECTROTEST's analysis of carbon phosphorous and sulfur are potential applications

SAE 316L stainless steel is an austenitic stainless steel and the second most common stainless steel after SAE 304 stainless steel.

High-grade steel type AISI 316 and AISI 316L can be analyzed with the optical emission

This makes it less susceptible to corrosion and staining. 316L stainless steel is often used in applications

In this work 316L stainless steel substrates were coated with sol-gel derived films by means of the dip-coating

For example, XRF can measure the elements required to identify 316 stainless steel, but cannot measure the Carbon

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Material Notes: Similar to Type 316 for superior corrosion resistance, but also has superior resistance to intergranular corrosion

Its record of reliability has helped make SPECTROMAXx perhaps the industry's best-selling arc/spark

Abstract Passive film growth on 316L stainless steel was investigated in borate buffer electrolyte (pH = 9.1) by real-time

In order to elucidate the roles of the composition-induced stress gradient and the traps formed by chromium



316L Carbon Spectrometer

atoms in

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