1. HT-HW500 Automatic Infrared Sulfur Analyzer

HT-HW500 Automatic Infrared Sulfur Analyzer is suitable for analyzing and determining the mass fraction of sulfur in steel, non-ferrous metals, cement, ores, glass, ceramics, and other metallic or non-metallic materials. It is a commonly used analytical instrument in physical and chemical laboratories.

Features:

Batch testing: Up to 24 samples can be loaded at once. The priority of samples can be dynamically adjusted during testing, and samples can be added, deleted, or inserted at any time. Supports cyclic loading.

High automation: Automatic weighing, sample feeding, data processing, result calculation, report printing, etc., enabling unattended operation.

Fast testing speed and accurate results: Equipped with a sample blowing function to ensure rapid and complete combustion of samples.

High precision: Features unique multi-point dynamic calibration and optional primary, secondary, and tertiary calibration methods to ensure accuracy for samples with high, medium, or low sulfur content.

High reliability: Utilizes internationally advanced key components to design a highly stable, low-drift infrared cell. Multiple hardware and software protections and self-diagnostic technologies ensure stable operation.

Intelligent energy-saving control: Automatically cools down after testing or when idle for extended periods, maintaining a low target temperature to save energy and extend the lifespan of high-temperature components.

Smooth operation: Employs a flexible transmission sample feeding mechanism, effectively resolving industry challenges such as excessive noise and crucible dropping during feeding.

Strong adaptability: Simplified gas circuit connections for user convenience.

Full-process monitoring: The instrument can be connected to a laboratory management system via a network interface for automatic data upload and comprehensive monitoring of the testing process.

Technical Specifications:

Continuous sample capacity: 24

Testing method: Infrared spectral absorption

Measurement range: 0.01%–20% (expandable upon customer request)

Sulfur resolution: 0.001%

Sample weight: 80–100 mg

Single sample testing time: Approx. 120 s

Temperature control accuracy: ±1°C

High-temperature furnace: 1350°C

Precision: Complies with GB/T 25214—2010 standards

Accuracy: Within the uncertainty range of standard samples

Power supply: 220±22 VAC, 50±10 Hz

Power: ≤4 kW

Weight: Main unit 60 kg

Dimensions (L × W × H mm): 620 × 590 × 820

Compliance standard: GB/T 25214—2010 (Infrared method for the determination of total sulfur in coal)

2. HT-DL910 Fully Automatic Sulfur Analyzer

HT-DL910 Fully Automatic Sulfur Analyzer is used in industries such as power, coal, metallurgy, petrochemicals, environmental protection, cement, papermaking, geological exploration, and scientific research institutions for the determination of total sulfur content in coal, coke, and petroleum. Its main feature is that after manual weighing and sample placement, the instrument can automatically and continuously perform batch operations, and samples can be dynamically added at any time, greatly improving testing efficiency.

It adopts a horizontal furnace structure and corundum boats for coal sample placement.

Instrument Overview:

1. **Accurate, Precise, and Stable Test Results:**
    1. Optimized system design ensures complete sample combustion, SO2 electrolysis, and current (charge) integration.
    2. High-precision, low-drift hardware integration signal circuit design. A separate microcontroller performs hardware integration during electrolysis, completely overcoming the issue of data omission in software integration, ensuring complete integration and accurate measurements.

3. Dual-rod sample feeding mechanism significantly improves feeding stability. Unique chain anti-scratch design effectively avoids sample flipping and jamming.

4. Wider and thicker platinum electrolysis electrode (195mm²) and indicator electrode (77mm²), with areas increased by 30% and 4 times respectively compared to ordinary instruments, ensuring larger contact area and more precise and complete integration.

2. **High Automation:**

1. After placing 21 samples at once, the instrument automatically feeds, tests, ejects, and discards samples, enabling unattended operation. Samples can be added or replaced during the experiment.

2. Uses a digital flow meter for real-time gas flow display.

3. **Stable Operation and User-Friendly Design:**

1. The system design fully considers the anti-fatigue performance of the instrument (especially components under high-temperature conditions). The high-temperature furnace uses imported new materials with excellent insulation and long service life.

2. Unique working model and device design minimize water vapor entering the drying tube. Combined with a large-capacity drying tube, it effectively reduces the frequency of desiccant replacement, operator workload, and operating costs.

3. Uses a stable, maintenance-free air pump with no need to replace rubber cups, ensuring long service life.

4. Convenient air-tightness check: Operators can complete it with a simple finger swipe.

5. New electrolytic cell leakage corrosion protection design prevents corrosion caused by abnormal leakage.

Technical Parameters:

1. Sulfur measurement range: 0.01%-50%

2. Sulfur resolution: 0.001%

3. Testing time: 3 minutes-5 minutes

4. Testing temperature: 1150℃ (coal), 920℃ (oil)

5. Temperature control accuracy: ±1℃

6. Sample weight: 50mg±0.5mg

7. Number of samples: 1-21

8. Testing method: Coulometric titration

9. Precision: Complies with GB/T214-2007

10. Accuracy: Within the allowable error range of standard samples

11. Power supply: 220V±10%, 50Hz, Power: ≤3.5kW

    (Note: The computer and sulfur analyzer host must use the same phase power)

12. Instrument dimensions: 900mm×580mm×420mm

13. Instrument weight: 45kg

3. HT-DL600 Fully Automatic Sulfur Analyzer

HT-DL600 Automatic Sulfur Determinator is primarily used for measuring the total sulfur content in coal, steel, and various minerals. It serves as a dedicated instrument for laboratories in sectors such as coal, power, chemical, building materials, metallurgy, geological exploration, commodity inspection, and environmental monitoring. The instrument complies with the requirements of the Chinese National Standard **GB/T 214-2007** (*Method for Determination of Total Sulfur in Coal*).

Performance Features:

1. **Continuous and Dynamic Testing:** Equipped with a continuous automatic sample feeding mechanism, it can hold 12 samples at once, and additional samples can be added during the testing process.

2. **Accurate Results and Fast Speed:** Uses a high-efficiency gas pump to ensure complete entry of combustion gas products into the electrolytic cell, ensuring fast and accurate results.

3. **High Automation:** Automatic sample feeding, automatic start and end of tests, automatic data processing, data saving, and report printing, achieving near-unattended operation and improving work efficiency.

4. **High Reliability:** Can be equipped with an external balance for automatic weighing, offering flexible use. Multiple hardware and software protection and self-diagnostic technologies ensure stable operation.

5. **Low-Temperature Sleep Function:** Extends the lifespan of the high-temperature furnace and silicon carbide tubes.

6. **On-Site Report Design:** Can design corresponding test report formats on-site according to customer requirements.

7. **Smart Terminal Function:** Provides multiple network access methods, combined with a data interaction center for data sharing and real-time data upload to management systems.

Technical Parameters of the Microcomputer Automatic Sulfur Analyzer:

- Sulfur resolution: 0.01%

- Sulfur measurement range: 0.01%～40%

- Testing time: 3～8 minutes per sample

- Temperature control accuracy: 1℃

- Maximum temperature: 1200℃

- Number of samples: 12 (can continuously add samples)

- Testing temperature: 1050℃ or 1150℃ (coal), 920℃ (oil), or customizable

- Sample weight: 50mg

- Precision: Complies with national standards

- Power supply: 220V±22V, 50Hz±1Hz

- Power: 3kW

- Dimensions: 730×500×430mm

4. HT-DL500 Fully Automatic Sulfur Analyzer Introduction

HT-DL500 Fully Automatic Sulfur Analyzer is designed based on the principle of coulometric titration. The microcontroller system controls the temperature of the high-temperature furnace and measures the coulometric titration results, sending corresponding control commands and independently completing related tasks. The instrument is mainly used to determine the total sulfur content in coal, steel, and various minerals. It is the preferred and essential instrument for laboratories in industries such as coal, power, chemical, building materials, metallurgy, geological exploration, commodity inspection, and environmental protection. It complies with the national standard GB/214-2007 "Determination of Total Sulfur in Coal."

Performance Features:

1. Equipped with a color touch screen and keyboard for dual operation, featuring a Chinese menu-style interface. The structure is simple, intuitive, easy to learn, convenient to operate, and offers stable and reliable performance.

2. The product uses a 7-inch color touch screen as the human-machine interaction component, embedded with a large number of illustrated and easy-to-learn images on how to use the instrument, operate it, install components, debug components, and maintain and repair components. This allows users to quickly master the instrument and become proficient in sulfur quantification testing knowledge in the industry. It is the first in the industry

to apply advanced technology with illustrated introductions to various components, real-time self-diagnosis of faults, and prompt solutions.

3. The instrument has real-time fault monitoring and diagnostic prompt functions, which can eliminate potential faults in their early stages and reduce the likelihood of further development of faults. Additionally, it provides detailed illustrated steps for fault handling, significantly reducing after-sales maintenance costs and effort.

4. The instrument adopts an advanced fuzzy PID speed temperature control mode, intelligently judging and adapting to silicon carbide tubes of different resistances, enabling linear heating and high temperature control accuracy. It also effectively protects the silicon carbide tubes and greatly extends their service life.

5. The instrument uses the Pinyin input method, supporting Chinese sample names for convenient sample management. Measurement results can be saved long-term, queried, and printed.

6. The system integrates the high-temperature furnace, magnetic stirrer, air purification device, electrolytic cell, automatic sample feeding mechanism, and microcontroller control circuit into the same chassis, making the entire system aesthetically pleasing, compact, easy to place and connect, and simple to operate and maintain.

7. High-precision, low-drift hardware integration signal circuit design ensures accurate measurement values.

8. Wider and thicker platinum electrolysis electrode (195mm²) and indicator electrode (77mm²), with areas increased by 30% and 4 times respectively compared to ordinary instruments, ensuring larger contact area and more precise and complete integration.

9. A separate microcontroller performs hardware integration during electrolysis,

completely overcoming the issue of data omission in software integration, ensuring complete integration and accurate testing.

Technical Parameters:

1. Sulfur measurement range: 0.01-50%.

2. Sulfur resolution: 0.001%.

3. Working furnace temperature: 1150℃ (coal), 900℃ (oil).

4. Temperature control accuracy: ±2.5℃.

5. Sample mass: 10mg~110mg.

6. Carrier gas flow rate: 1000ml/min.

7. Sulfur measurement time: 5 minutes, with automatic endpoint determination by the instrument.

8. Heating rate: 20~25 minutes.

9. Power requirements: Single-phase AC voltage ~220V, 50Hz, power 3KW.

10. Accuracy: Complies with the national standard GB/T214-2007.

5.HT-CHN5000 Carbon Hydrogen and Nitrogen Element Analyzer

HT-CHN5000 Carbon Hydrogen and Nitrogen Element Analyzer is suitable for testing the content of carbon, hydrogen, and nitrogen elements in combustible materials such as coal, coke, and biomass fuels. It is widely applicable in industries such as power, coal, metallurgy, chemical, building materials, testing, geology, and research institutions.

Performance Features:

- **High Efficiency**: Equipped with a pneumatic sample tray, it allows continuous sample feeding and can hold up to 36 samples at once.

- **Fast Testing Process**: Supports cyclic sample addition and allows new samples to be inserted at any position, enabling immediate testing upon sample arrival.

- **Compact and Aesthetic**: The smallest and lightest element analyzer in its class.

- **High Automation**: Features automatic sample dropping, automatic control of the experimental process, automatic data processing, result calculation, and report printing, enabling unattended operation.

- **Easy Maintenance**: Automatic gas path fault diagnosis and leak detection, reducing the difficulty of instrument maintenance.

- **Intelligent Energy Saving**: Automatically cools down after testing or when idle

for too long, maintaining a low target temperature to save energy and extend the lifespan of high-temperature components.

- **Convenient Testing**: Combines fixed combustion processes with automatic adjustments to ensure accurate test results while minimizing user testing costs.

- **Long Service Life**: High-stability infrared cell with complete independent intellectual property rights, featuring low drift, high efficiency, and durability.

- **Remote Monitoring**: The instrument can be connected to a laboratory management system via a network interface, enabling automatic data upload and full-process monitoring of testing.

 Technical Parameters:

- **Testing Method**: Carbon and hydrogen by infrared spectroscopy, nitrogen by thermal conductivity.

- **Testing Range**: Carbon (0.005 ~ 100%), Hydrogen (0.05 ~ 25%), Nitrogen (0.01 ~ 50%).

- **Analysis Time**: Approximately 300 seconds per sample.

- **Repeatability**: Carbon (Cad ≤ 0.5%), Hydrogen (Had ≤ 0.15%), Nitrogen (Nad ≤ 0.08%).

- **Sample Weight**: 70~80mg.

- **Automatic Sampler**: 36 samples, supports cyclic sample addition and allows arbitrary sample insertion.

- **Power Supply**: 220±22VAC, 50±10Hz.

- **Power Consumption**: ≤4kW.

- **Weight**: 100kg.

- **Compliance Standards**: ASTM D5373 – 2014 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal and Coke; GB/T30733-2014 Determination of Carbon, Hydrogen, and Nitrogen in Coal by Instrumental Method.

6. HT-CH3000 Carbon Hydrogen Analyzer

HT-CH3000 Carbon Hydrogen Analyzer is a high-end instrument in the carbon-hydrogen analysis series. It features computer-automated control and can simultaneously detect the content of carbon and hydrogen elements, offering fast coating and a wide testing range.

I. Applicable Standards

The measurement results comply with the Chinese National Standard **GB/T 476-2008**. It is suitable for determining the carbon and hydrogen content in organic matter within coal and other solid materials, making it a common instrument in laboratories for coal, power generation, metallurgy, coking products, and related industries.

II. Technical Features

1. **Fully Automated Operation**: The entire process is controlled by a computer, including automatic sample feeding, endpoint coating current judgment, and real-time display of hydrogen content in organic matter.

2. **Integrated Design**: Sleek and modern appearance with optimized gas path design to effectively prevent gas leaks and blockages. The carbon measurement device is integrated into the instrument, simplifying the testing process.

3. **Durable Electrolysis Cell**: Manufactured using specialized techniques to

prevent cleaning-induced detachment, ensuring long-term usability and reusability.

4. **Rapid Heating**: Fast heating capability with durable furnace wires that resist burnout.

5. **High Efficiency**: Fast analysis, accurate data, and a high degree of automation.

III. Technical Parameters

1. **Measurement Range:**

    1. Hydrogen: 0–99.9%

    2. Carbon: 0–99.9%

2. **Temperature Control**:

    1. 850°C ± 5°C

    2. 300°C ± 5°C

3. **Coating Electrolysis Voltage: 10V**

    Electrolysis Voltage: 24V

4. **Current**:

    1. Electrolysis current: <800mA

    2. Endpoint current: <70mA

5. **Testing Time**: Approximately 10 minutes.

6. **Coulometric Integrator Stability**: Linearity ±0.1%.

7. **Sample Particle Size**: <0.2mm.

7.HT-FL3000 Fully Automatic Fluorine and Chlorine Analyzer

Coal Fluorine and Chlorine Analyzer is mainly used in coal, power, coal chemical industries, and related teaching, research, and quality supervision units for the detection and analysis of fluorine and chlorine elements in coal.

Coal Fluorine and Chlorine Ion Analyzer

Features of the Fully Automatic Fluorine and Chlorine Analyzer:

- PID-controlled furnace current with low-temperature drift components, ensuring high temperature control accuracy and effectively extending the service life of silicon carbide tubes.

- Evaporation control using solid-state relays, with voltage adjustable from 0-220V.

- Equipped with an imported digital ion meter and a precision automatic titrator. The computer program automatically collects various data and curves, and measurement results are automatically calculated.

- Supports automatic titration with user-defined titration speed and volume (optional).

- Supports automatic sample feeding (optional).

- Our company can also customize various titration programs for users with different requirements to achieve computerized titration operations and

improve testing accuracy.

Parameters of the Fully Automatic Fluorine and Chlorine Analyzer:

- Temperature control accuracy: 1100±2℃

- Heating time: Reaches 1100±2℃ within 30 minutes

- Power supply: AC220V±10%, 50Hz

- High-temperature hydrolysis time: Fluorine: 30min; Chlorine: 30min

- Titration time (excluding hydrolysis time):

    - Fluorine: 3min (after preliminary sample processing, excluding sample processing time, which takes 30min)

    - Chlorine: 3min (including sample processing time)

- Measurement accuracy:

    - Fluorine: ≤150ug/g ±15; >150ug/g ±10%

    - Chlorine: ±0.01

- Measurement range:

    - Fluorine: 10ug/g – 2000ug/g

    - Chlorine: 10ug/g – 2000ug/g

- Testing method: High-temperature combustion hydrolysis method.

- Total power consumption: ≤3.5KW.

- Stirring speed is continuously adjustable with digital display. The computer automatically collects measurement data and performs calculations.

Henan Hengte Technology Co., LTD

Contact person：Manager Chang

phone：+86 15639228011 （WhatsApp)

E-mail：info@httlab.com

Wechat

WhatsApp

Website：www.httlab.com

Address：Zhengzhou, China