



CARBON, HYDROGEN AND SULFUR ANALYZER: C(H)S 580 A

RAPID AND PRECISE ELEMENTAL ANALYSIS OF ORGANIC SAMPLES

The analyzers of ELTRA's C(H)S 580 A series determine the concentrations of carbon, hydrogen and sulfur in predominantly organic samples via combustion in a ceramic resistance furnace at temperatures up to 1550 °C, followed by detection in infrared measuring cells.

ELTRA C(H)S 580 A SERIES

CONFIGURATIONS

The ELTRA C(H)S 580 A provides fast, accurate and robust carbon, hydrogen and sulfur analysis over a wide concentration range from the lower ppm range up to 100 %. Depending on the application, the analyzers can be configured with different measuring cells. The robust design of the C(H)S 580 A series also allows the analysis of acidified samples (TOC measurement).



BENEFITS

- | Fast & simultaneous determination of C; H; S
- | Configurable as C; S; C/S or C/H/S analyzer
- | Wide concentration range from 0.005 – 100 %
- | High weights possible for analysis of heterogeneous samples
- | Optional autoloader with 36 or 130 positions (optional acid-resistant)

ELTRA C(H)S 580 A SERIES

OPERATION

Operation of the C(H)S 580 A is simple, fast and convenient. The samples are weighed and registered in the software as manual analysis or analysis via autosampler. Typical sample weights are between 50 and 500 mg. After starting the analysis, the sample is introduced into the furnace and the combustion gases CO_2 , H_2O and SO_2 are measured in up to four infrared measuring cells. The measurement results can be exported via LIMS, report or text file.



Logging the sample into the software and weighing



Placement on the autoloader and analysis



Measurement results and export

TYPICAL SAMPLE MATERIALS

Fuels (coal, coke, oil, secondary fuels); soil (TC and TOC); ores; construction materials



CONFIGURATIONS AND OPTIONS

ELTRA C(H)S 580 A analyzers can be configured to meet a wide range of customer requirements. C;C/S; C/H/S configurations are available with up to 2 infrared cells for each element to cover a wide working range. Robust measuring cells for the reliable determination of sulfur in very high concentrations are also available.

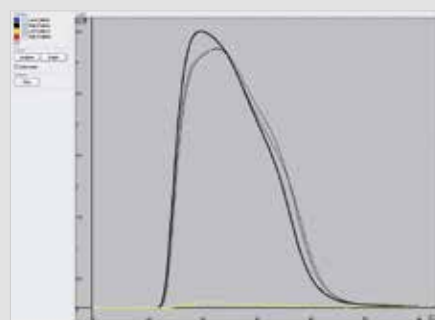
The ELTRA C(H)S 580 A series is perfectly equipped for TOC analysis according to DIN EN 15936 with optional acid-resistant autosamplers, as well as the optional TIC module.



TYPICAL MEASUREMENT RESULTS BIOMASS

Biomass is generally characterized by low sulfur values. Biomass samples can be analyzed quickly and reproducibly in the C(H)S-580A at weights of approx. 200 mg.

Sample type	Weight (mg)	Carbon (%)	Sulfur
Biomass	214.0	46.85	0.018
Biomass	210.3	46.99	0.017
Biomass	214.5	46.95	0.017
Mean value		46.93	0.0173
Standard deviation		± 0.07	± 0.0006



TECHNICAL INFORMATION

Analyzer	CS-580 A; CHS-580 A („Helios“)
Functional principle	Combustion analyzer with IR detection and vertical ceramic furnace; Tmax: 1550 °C
Standards	DIN EN 15936 ASTM D 6316; D 7679; D 7662; D 7633 ASTM D 1552; D1619; D4239; D5016 ISO 19579; 15178
Nominal sample weight	500 mg
Measuring range ¹⁾	C: 0.005 – 100 % H: 0.01 – 15 % S: 0.005 – 20 %
Analysis time	60 – 180 sec
Calibration	Reference materials (solid), oils
Chemicals	Magnesium perchlorate NaOH on a carrier For TOC analysis: filter chemicals
Gas	Oxygen 99.5 % (2 – 4 bar) Compressed air 4 – 6 bar
Power supply	230 V AC +10 % ; 50/60 Hz 2000 W maximum heating capacity
Dimensions (W x H x D)	75 x 52 x 60 cm
Weight	90 kg
Required accessories	PC, monitor, balance
Options (retrofitable)	TIC module Autosampler (36, 130 positions)

¹⁾ Measuring range depends on configuration



THE ELTRA APPLICATION LABORATORY

For many common samples, such as ores or ceramics, no standards are published regarding carbon and/or sulfur analysis by combustion analysis and IR detection. To guarantee a safe and reliable measurement, the ELTRA laboratory in Haan is available for application advice and free trial measurements with all ELTRA analyzers.

By participating in round robin tests (e.g. ASTM Powder Metallurgy) and in the certification of reference materials (e.g. ECRM 268-1; ECRM 049-1), a consistently high analysis quality is guaranteed.



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