

Macro elemental analyzer

multi EA[®] 4000



multi EA[®] 4000

- The multi EA[®] 4000 is a macro elemental analyzer for the determination of carbon, sulfur and chlorine in solid and pasty samples
- It enables the fully automated determination of the parameters for total carbon content, total sulfur, total chlorine as well as TIC, TOC, EC/BOC
- Sample weighing for up to 3 g assures representative results, even with inhomogeneous sample materials
- The multi EA[®] 4000 combines reliability and robustness at the highest level
- It requires minimum maintenance effort and is characterized by low operating costs
- The analyzer works in conjunction with a number of standards such as DIN, EN, ISO, ASTM
- The multi EA[®] 4000 is suitable for most diverse analytical requirements; in addition, the system can be extended and modified on an individual basis

Sample Digestion

The **catalyst-free high temperature digestion** in oxygen streams at up to a combustion temperature of **1500 °C (1800 °C)** allows the digestion of thermally very stable samples/compounds.

Digestion temperature	Up to 1500 °C (1800 °C with additional aggregates) – ensures complete digestion of thermally stable compounds like heavily decomposable carbonates or sulfates
Required gases	Oxygen 99,5 % for C and S determination, additionally argon for chlorine analysis or pyrolysis (EC/BOC, active carbon)
HTC technology	The application of high-temperature ceramic technology (HTC) allows the analysis of more aggressive and corrosive samples in nearly wear-free ceramic combustion vessels with high digestion temperatures
Sample weighing	The multi EA [®] 4000 is a true macro elemental analyzer. It allows sample weight of up to 3 g, thus ensuring reliable analysis even with very inhomogeneous sample material. Due to the high dynamic weighing range, the analysis can be adapted to the widest range of element concentrations.

Carbon Determination	Sulfur Determination	Chlorine Determination
Detection		
NDIR	NDIR	Coulometry
Measurement Range*		
0–100 % C at 500 mg sample weight or 500 mg total C	0–20 % S at 75 mg sample weight or 15 mg total S	0–20 % Cl at 100 mg sample weight or 20 mg total Cl
Detection Limit**		
10 µg C absolute or 3 ppm at 3000 mg sample weight	10 µg S absolute or 3 ppm at 3000 mg sample weight	1 µg Cl absolute or 0.3 ppm at 3000 mg sample weight
Precision (reproducibility)**		
Better 2 % RSD at 12 % C	Better 2 % RSD at 2 % S	Better 2 % RSD at 3.5 % Cl
Sample weight***		
Up to 3000 mg		
Analysis time**/**		
2-3 min	2–3 min	3–10 min
Furnace temperature		
Up to 1500 °C	Up to 1500 °C	Up to 1000 °C
Gas supply		
Oxygen 99.5 % 2–4 bar, approx. 2 l/min For pyrolysis additional argon 99.996 % 2–4 bar, approx. 2 l/min	Oxygen 99.5 % 2–4 bar, approx. 2 l/min	Oxygen 99.5 % 2–4 bar, approx. 1 l/min, Argon 99.996 % 2–4 bar, approx. 2 l/min
Power supply		
230 VAC; 50/60 Hz; max. 16 A		
Measurement of the basic instrument (C/S/Cl)	Approx. 810 mm x 460 mm x 550 mm (W x H x D)	
Additional module	Approx. 300 mm x 460 mm x 550 mm (W x H x D)	
Sample feeder	Approx. 500 mm x 460 mm x 550 mm (W x H x D)	
Weight of the basic instrument	Approx. 40 kg	
Additional module	Approx. 8 kg	
Sample feeder	Approx. 15 kg	

* Other specifications upon request

** Depends on the probe matrix and equipment

*** Depends on the concentration of elements