

THE SERCON GROUP

# MICROCAPS DUAL INLET CARBONATES





## MICROCAPS DUAL INLET CARBONATES

Sercon are dedicated to the design, manufacture and support of **Isotope Ratio Mass Spectrometers** and their associated **sample preparation systems**.

The Sercon microCAPS is a new design of carbonate analysis, enabling up to 40 samples to be analysed per run with dual inlet precision.

Individual acid dosing and maintenance of all components at high temperature ensure that the highest level of analytical performance provides the best quality data from your samples.

CAPS is a high performance carbonate preparation system for automatic measurement of carbon-13 and oxygen-18 by dual-inlet on the GEO 20-22. The stable isotope signatures of carbonates are analysed by individually dosing samples with orthophosphoric acid and measuring the resulting carbon dioxide. Precise temperature control and integration of the GEO20-22 provides ultimate precision of stable isotope analysis. The whole instrument system is driven by Windows compatible software for ease of operation and networking capability.



- 40 sample carousel for individual acid dosing to avoid problems of 'memory'.
- System is housed in a programmable oven that may be operated at up to 90°C for more reticent samples.
- All acid wetted parts in KEL-F or quartz glass to enable elemental analysis of residue.
- Dedicated cryofocussing trap for CO<sub>2</sub> and cold loop cooled by cryoprobe to remove water vapour.
- Dedicated high vacuum via turbomolecular pump to ensure transfer lines are clean.
- Control software is integrated to GEO20-22 software to allow use of micro cold finger for small samples and call up of stored methods for different sample types.
- Re-usable quartz reaction vessels.  
5 mg to 50 µg of carbonate

### Power and Gas Requirements:

Power	110-240 VAC
Compressed Air	100 psi
Liquid Nitrogen	



Specification	MicroCAPS
Design	All essential reaction parts in a precisely temperature controlled oven. Individual acid dosing, dedicated cryofocussing and dedicated vacuum pumping.
Autosampler	40 sample stainless steel carousel.
Temperature Control	Thermostatically controlled reaction oven housing all critical components. Designed to operate up to $90^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ .
Sample Containers	Reusable quartz reaction vessels.
Sample Range	5mg to 50 $\mu\text{g}$ carbonate optional to 5 $\mu\text{g}$ .
Wetted Parts	Manufactured from KEL-F or quartz glass.
Water Removal	Cryogenic loop to prevent transfer of vapour to the mass spectrometer inlet.
CO <sub>2</sub> Focusing	Liquid nitrogen cooled trap.
Vacuum Transfer	Dedicated turbomolecular pump (70 L/s) and pressure transducer for monitoring reaction/ gas transfer.
Software	Sercon Callisto software. Proprietary operational software for system control and data handling. Fully compatible with all versions of Windows, currently systems are installed with Windows 7.

## INTERNAL PRECISION $2\sigma_{10}$ FOR 10 CHANGEOVERS ON GASES AT NATURAL ABUNDANCE.

Gas	Sample Size (bar $\mu\text{L}$ )	Standard Inlet (‰)	Cold Finger (‰)
CO <sub>2</sub> (C)	100	0.01	0.01
	10		0.02
	3		
CO <sub>2</sub> (O)	100	0.015	0.015
	10		0.03
	3		
External Precision:- $\sigma(n-1)$ for n=5 containers.			

Gas	Sample Size (bar $\mu\text{L}$ )	Standard Inlet (‰)	Cold Finger (‰)
CO <sub>2</sub> (C)	5000	0.01	0.03
	1000		0.02
	50		
CO <sub>2</sub> (O)	5000	0.02	0.06
	1000		0.04
	50		





**sercon**  
The *Stable* Isotope Company

[www.sercongroup.com](http://www.sercongroup.com)

Unit 3B Crewe Trade Park,  
Gateway, Crewe,  
Cheshire. CW1 6JT UK

t: +44 (0)1270 580008  
f: +44 (0)1270 252310  
e: [sales@sercongroup.com](mailto:sales@sercongroup.com)



Like us on Facebook "SerconLimited"



Follow us on Twitter @SerconLimited

Sercon is ISO 9001:2008 accredited