

Appendix IV

Stable Isotope Data



Table 1 Concentrations of total carbon (TC), total inorganic carbon (TIC) and total organic carbon (TOC) for stromatolitic carbonates of the KDF and BVF. All data are reported in wt.%.

sample	TC	TIC	TOC
BVF 49	6.22	6.08	0.13
BVF 44	0.81	0.68	0.13
BVF 24b	5.64	5.50	0.14
BVF 22	4.94	4.66	0.28
BVF 02b	0.45	0.36	0.10
BVF 02a	0.17	0.08	0.09
KDF 70	0.70	0.10	0.60
KDF 66b II	7.87	7.72	0.15
KDF 66b I	8.04	7.84	0.21
KDF 66a	9.25	9.19	0.06
KDF 64	6.32	6.22	0.10
KDF 63	8.83	8.65	0.18
KDF 62	1.14	0.63	0.52

Measurements were performed on a 5500 CS-Mat that was calibrated using CaCO₃. Combustion of 100- 150 mg of samples powder took place at 1350°C. Standards used: Graphite 001, Steinkohle 1.

Table 2 $\delta^{13}\text{C}_{\text{carb}}$ and $\delta^{18}\text{O}_{\text{carb}}$ measured versus PDB for total carbonate from samples of the KDF and BVF. CO₂ concentrations are reported in μm .

sample	CO ₂	$\delta^{13}\text{C}_{\text{carb}}$	std. dev.	$\delta^{18}\text{O}_{\text{meas.}}$	$\delta^{18}\text{O}_{\text{corr.}}$	std. dev.	corr. factor
BV 49	59.1	-1.76	0.011	-10.582	-19.65	0.026	1.00925
BV 22	68.9	-4.31	0.022	-10.240	-19.31	0.017	1.00925
BV 02b	6.2	-6.89	0.024	-9.910	-18.98	0.041	1.00925
KD 66b I	93.2	-2.68	0.016	-10.480	-19.55	0.046	1.00925
KD 66b II	88.1	-2.65	0.015	-10.499	-19.57	0.052	1.00925
KD 66 a	87.7	-2.78	0.021	-10.519	-19.59	0.024	1.00925
KD 64	63.7	-2.88	0.020	-10.352	-19.42	0.033	1.00925
KD 63	84.6	-1.72	0.020	-10.584	-19.65	0.018	1.00925
IAEA-CO-1 ¹	49.6	2.42	0.019	6.595	-2.63	0.031	1.00925

Measurements were performed on a Finnigan DELTAplus mass-spectrometer with dual inlet system. ¹: standard used.

Table 3 $\delta^{13}\text{C}_{\text{org}}$ measured versus PDB for stromatolitic carbonates from the KDF and BVF. CO₂ concentrations are reported in μm .

sample	CO ₂	$\delta^{13}\text{C}_{\text{org}}$	std. dev.
BVF 49	66.65	-37.869	0.017
BVF 44	66.95	-37.394	0.022
BVF 22	70.52	-42.921	0.019
BVF 02b	22.03	-44.670	0.028
KDF 66b II	41.66	-39.482	0.013
KDF 66b I	18.76	-39.212	0.021
KDF 66a	57.19	-33.054	0.013
KDF 64	49.40	-35.348	0.021
Steinkohle ¹	219.57	-25.617	0.013

Measurements were performed on a Finnigan DELTAplus mass-spectrometer with dual inlet system. ¹: standard used.