



Supplement of

Technical note: Kinetically resolved volatile and redox fingerprints of geologic materials by ramped combustion microchromatography

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Supplementary file

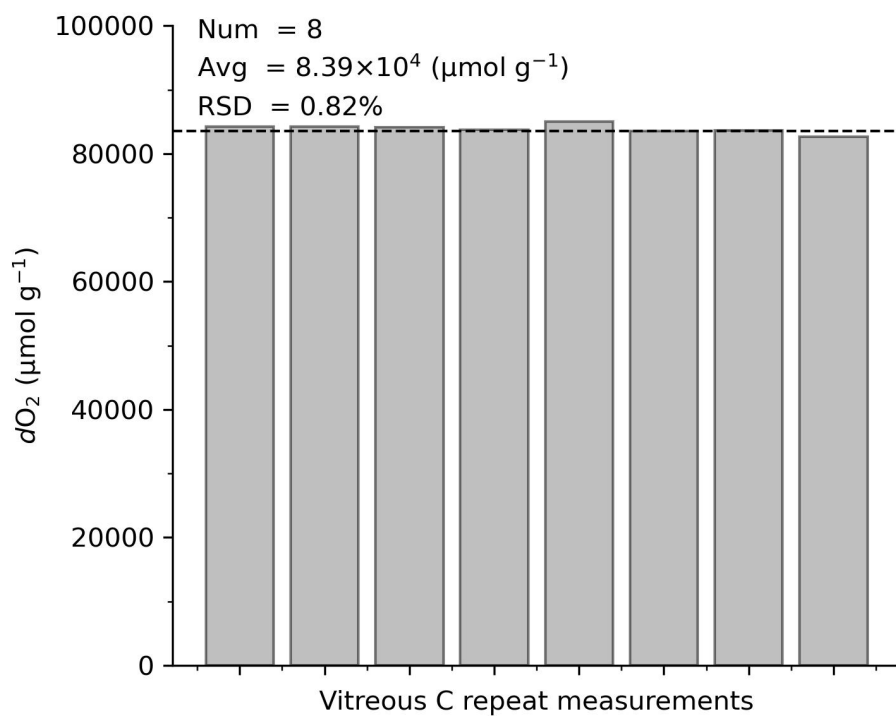


Figure S1. Repeat measurements for standard Vitreous C and graphite with relative standard deviation (RSD = 0.82%), indicating high precision and reproducibility. Black dashed lines indicate the theoretical value.

Table S1. Repeat measurements for standards with TGA/DSC-MicroGC

Number	Sample name	Heating rate ($^{\circ}\text{C}/\text{min}$)	Sample mass (mg)	$d\text{O}_2$ ($\mu\text{mol/g}$)
1	Vitreous C	2.5	2.581	8.42E+04
2	Vitreous C	4	2.537	8.41E+04
3	Vitreous C	5	2.532	8.38E+04
4	Vitreous C	10	2.532	8.43E+04
5	Vitreous C	10	2.686	8.50E+04
6	Graphite	10	1.169	8.36E+04
7	Graphite	10	1.223	8.26E+04
8	Vitreous C	20	2.599	8.36E+04

Table S2. Compilation of gas concentration measurement for calibration.

Standards	Molecular	Sample mass (mg)	Molecular mass (mg)	Peak area integral
Blank	OH	0.00	0.00	0.00E+00
Al(OH) ₃	OH	6.52	4.26	1.59E+06
Al(OH) ₃	OH	3.80	2.49	9.60E+05
Al(OH) ₃	OH	1.30	0.85	3.30E+05
Al(OH) ₃	OH	0.54	0.35	1.19E+05
Blank	C	0.00	0.00	0.00E+00
Vitreous C	C	2.69	2.69	1.09E+07
Vitreous C	C	2.58	2.58	1.00E+07
Vitreous C	C	2.54	2.54	1.00E+07
Graphite	C	1.17	1.17	4.69E+06
Air	C	123.69	0.05	1.54E+03
CaCO ₃	C	4.54	0.55	2.22E+06
CaCO ₃	C	18.53	2.22	8.87E+06
IFP	C	2.73	0.18	6.42E+05
Blank	S	0.00	0.00	0.00E+00
Pyrite	S	1.72	0.92	1.25E+06
Pyrite	S	0.71	0.38	4.94E+05
Pyrite	S	0.62	0.33	4.37E+05
IFP	S	31.29	0.23	2.47E+05
CLB_1	S	11.07	0.16	1.98E+05
JSD_1	S	46.15	0.60	7.07E+05