

## APPENDIX 4

### EMP chemical composition of spinel group minerals in unequilibrated H3.8 inclusions, host rock and clasts in the Pultusk breccia

[wt.%]	H3.8 inclusions								H4/H5 host rock				Clasts H5 and H6		
	core	rim	core	rim	rim	core	rim	rim							
Al <sub>2</sub> O <sub>3</sub>	62.44	54.82	35.91	43.64	21.51	52.52	24.76	7.07	11.52	14.24	6.38	6.35	6.71	6.82	6.87
MgO	17.55	15.67	10.04	12.39	6.94	14.88	7.96	3.36	5.09	6.34	2.69	2.98	2.88	2.87	2.78
SiO <sub>2</sub>	0.05	b.d.	b.d.	0.12	0.18	0.38	0.19	0.07	0.07	0.08	0.13	b.d.	b.d.	b.d.	b.d.
TiO <sub>2</sub>	0.13	0.13	0.45	0.46	1.26	0.35	0.83	2.30	1.37	1.20	1.83	1.79	2.11	1.71	1.93
CaO	b.d.	0.03	b.d.	0.03	0.05	b.d.	0.03	0.06	0.09	0.07	b.d.	0.16	b.d.	b.d.	0.04
FeO *	14.10	15.62	21.66	18.87	24.45	16.70	23.09	28.75	25.54	24.05	29.05	28.53	29.01	28.43	29.00
MnO	0.24	0.31	0.59	0.41	0.72	0.33	0.69	0.97	0.86	0.79	1.17	1.17	0.96	1.08	1.10
Cr <sub>2</sub> O <sub>3</sub>	5.19	12.23	30.58	23.52	44.17	15.12	42.10	56.49	53.86	52.15	56.53	57.20	58.05	56.28	57.49
ZnO	0.62	0.62	0.44	0.48	0.35	0.60	0.33	0.15	0.34	0.23	0.41	0.35	0.31	0.39	0.41
NiO	b.d.	b.d.	b.d.	b.d.	b.d.	b.d.	b.d.	0.11	b.d.	b.d.	0.11	b.d.	b.d.	b.d.	b.d.
V <sub>2</sub> O <sub>3</sub>	0.21	0.24	0.45	0.25	0.47	0.27	0.36	0.81	0.43	0.27	0.67	0.68	0.79	0.75	0.77
Total	100.53	99.68	100.12	100.17	100.11	101.17	100.33	100.13	99.17	99.43	98.96	99.22	100.86	98.33	100.38

\* – total iron analysed as FeO, Fe<sup>3+</sup> content calculated based on the stoichiometry; b.d. – below detection limit