

Major Element (EDX, wt.%)	AT				ATHO-G				Diff. (%)
	This study		Machida and Arai (2003)		This study		Preferred Value		
	Av.	SD	Standard value		Av.	SD	Av.	U	
SiO <sub>2</sub>	78.02	0.15	78.47		76.07	0.11	75.89	0.70	
TiO <sub>2</sub>	0.11	0.05	0.13		0.30	0.03	0.26	0.02	
Al <sub>2</sub> O <sub>3</sub>	12.40	0.15	12.21		12.23	0.04	12.25	0.20	
FeO	1.22	0.04	1.20		3.23	0.06	3.28	0.10	
MnO	0.07	0.06	0.04		0.11	0.05	0.11	0.01	
MgO	0.12	0.04	0.14		0.11	0.02	0.10	0.01	
CaO	1.14	0.05	1.10		1.78	0.02	1.71	0.03	
Na <sub>2</sub> O	3.44	0.10	3.30		3.60	0.03	3.76	0.31	
K <sub>2</sub> O	3.48	0.10	3.40		2.83	0.03	2.65	0.09	
Total	100.00		100.00		100.00		100.00		
n	15		15		15				
Trace element (LA-ICP-MS, ppm)	This study		Kimura et al.(2015)		This study		Preferred Value		Diff. (%)
	Av.	SD	Av.	SD	Av.	SD	Av.	U	
Sc	7.16	0.56	6.96	0.58	7.08	0.54	7.00	0.90	1.1
V	1.56	0.17	1.67	0.1	4.10	0.21	3.91	0.34	4.8
Cr	0.25	0.25	1.9	2.2	5.96	0.43	6.10	1.40	-2.4
Co	0.45	0.13	0.7	0.2	1.90	0.30	2.13	0.47	-10.9
Ni	0.03	0.44	-4.4	6.4	12.9	1.1	13.0	5.0	-1.0
Cu	1.82	0.42	2.3	0.3	18.77	0.84	18.6	2.2	0.9
Zn	31.3	2.4	32	1.8	150.0	6.8	141	15	6.4
Ga	12.56	0.84	13.4	0.5	25.6	1.8	25.3	2.4	1.0
Rb	129.3	6.5	133	3.06	67.1	2.5	65.3	3.0	2.8
Sr	70.25	0.91	69	1	93.1	4.8	94.1	2.7	-1.1
Y	21.5	1.8	22.7	0.6	91.6	1.8	94.5	3.5	-3.0
Zr	119.1	5.7	120	3	510	19	512	20	-0.5
Nb	6.55	0.49	7.52	0.3	61.4	3.0	62.4	2.6	-1.6
Cs	8.37	1.12			1.09	0.19	1.08	0.11	1.0
Ba	488	16	488	10	536	24	547	16	-2.1
La	23.2	1.2	22.9	0.66	55.1	2.1	55.6	1.5	-0.9
Ce	42.0	1.3	45.4	1.64	120.2	5.3	121.0	4.0	-0.7
Pr	4.42	0.20	4.58	0.17	14.65	0.95	14.60	0.40	0.4
Nd	17.6	1.0	17.2	0.73	59.5	1.3	60.9	2.0	-2.2
Sm	3.67	0.25	3.5	0.21	14.1	1.3	14.2	0.4	-0.5
Eu	0.47	0.04	0.49	0.04	2.71	0.20	2.76	0.10	-1.7
Gd	3.35	0.49	3.04	0.32	14.9	1.2	15.3	0.7	-2.8
Tb	0.52	0.03	0.54	0.06	2.43	0.22	2.51	0.08	-3.1
Dy	3.62	0.35	3.9	0.36	16.05	0.63	16.20	0.70	-0.9
Ho	0.74	0.07	0.77	0.04	3.31	0.28	3.43	0.11	-3.5
Er	2.44	0.41	2.11	0.24	10.62	0.97	10.30	0.50	3.2
Tm	0.34	0.05	0.35	0.03	1.50	0.10	1.52	0.07	-1.3
Yb	2.65	0.23	2.56	0.16	10.04	0.59	10.50	0.40	-4.4
Lu	0.37	0.06	0.45	0.03	1.38	0.12	1.54	0.05	-10.5
Hf	3.33	0.27	3.77	0.23	13.47	0.87	13.70	0.50	-1.7
Ta	0.65	0.05	0.77	0.05	3.80	0.24	3.90	0.20	-2.5
Pb	22.19	0.77	22.6	0.41	5.74	0.37	5.67	0.62	1.3
Th	11.36	0.80	11.45	0.44	7.56	0.32	7.40	0.27	2.1
U	2.69	0.17	2.7	0.18	2.35	0.08	2.37	0.12	-0.9
n	10		9		10				

Appendix 1. Glass composition data for Aira-Tn tephra and ATHO-G of MPI-DING Reference Glasses. Av., average; SD, standard deviation; U, uncertainty at the 95% confidence level; n, number of analyses. Preferred values are from Jochum et al. [2006].